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Montreal Medical Journal

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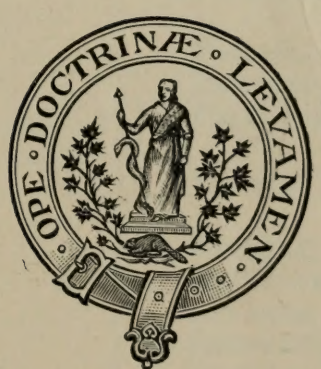

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THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIX. JANUARY, 1900. No. 1.

Original Communications.

ON THE ETIOLOGY AND SYMPTOMATOLOGY OF GOITRE.*

BY

J. GEORGE ADAMI, M.A., M.D.,

Professor of Pathology, McGill University, Montreal.

The persistent and recognisable enlargements of the thyroid gland which we classify under the name of Goitre or Bronchocele, are from almost every aspect a pain to the pathologist, even if like so many human ills to so many patients, an interesting pain. He knows not their cause: when he comes to study them histologically, the changes they present are bewildering in their manifoldness: his medical and surgical colleagues have provided him—perhaps it would be more courteous, if not more correct, to say, can provide him—with singularly few data whereby to recognise different forms of disease associated with different anatomical lesions, and so to establish a useful classification; while when symptoms are present the explanations he can offer as to the mode of development of the same, are such that he has found it hard even

* The following address has had a somewhat checkered career, nor do I feel that I can well publish it in these pages without a word or two of explanation. In its first form it began to develope itself as one of the opening addresses in the discussion upon "Goitre," held by the Montreal Medico-Chirurgical Society upon June 12th, 1899. At that period I felt so uncertain about the conclusions I had reached that the latter half of the address was not committed to paper save in the form of rough notes, simply because it would not work itself out to my satisfaction. In this incomplete form I had an excuse for not publishing it in this JOURNAL, but when during the autumn the clamour of the Editor became so persistent that I had to take up the address for publication along with the other proceedings of the Society in question, then upon settling down to the matter I had to all intents and purposes to rewrite the first portion of the address, and then also I came to conclusions with regard to the second portion much in advance of those given at the Medico-Chirurgical Society. Thus in its totally revised form I delivered the address as a "clinical lecture" at the Cook County Hospital, Chicago, Nov. 29th, 1899. Under the circumstances, as this originated in an address given before our Society, Mr. Malcolm Morris, Editor of the *Practitioner*, has very kindly consented that it should appear in this JOURNAL coincidently with its appearance in his.

to convince himself that they are correct. If he ascribes them directly to the local enlargement of the organ, he can in the majority of cases find no absolute relationship between the size of the goitre and the extent of the symptoms, if to aberrant or excessive action of the gland, then again he can make out no sure relationship of the size and rate of growth of the goitre to the extent of the symptoms; while, if he looks beyond the gland to some constitutional disturbance leading at the same time to the goitrous enlargement and to these other symptoms, he finds himself in the *impasse* of not being able to state with any certainty what that constitutional disturbance can be.

Yet this very fact that he is so painfully ignorant about the subject does, it must be confessed, stimulate curiosity. Indeed, an obscure disease is to the pathologist what a virgin peek is to the mountaineer, and medical men will continue to attempt to solve the problem of the causation of such obscure diseases with untiring zest until the labours of many lead to some one finding the solution. To-day we shall not scale the peek: I can but point out to you what would seem the right path to take in order to reach the summit, and, cutting a few steps at the bottom of the ascent, may make that ascent a little more possible, a little less toilsome.

Here in connection with the *causation* of goitre the theories that have been suggested are legion: merely to enumerate them would far more than take up all the time at my disposal this morning. In Switzerland and England it used to be popular to explain goitre as due to some subtle influence brought about by life in mountainous regions, but our Island of Montreal can scarcely be spoken of as anything but a rich alluvial plain with one old volcano very much the worse for wear cropping out of one small portion thereof. And yet the district is so goitrous that in some of the French-Canadian villages but a few miles from Montreal, scarce a family is to be found that has not one or more goitrous members. Then, too, the carrying of loads upon the head has been called a cause, but rural Montrealers do not carry loads on their heads, nor do animals do this—horses and dogs; yet they are found similarly affected.

Again, the geographical conformation of the country has been regarded by many as explaining the relative frequency of the condition. Bircher has especially upheld this geological theory, if I may so term it, of goitre. In Switzerland, for example, he has pointed out that goitre is almost limited to Silurian and Devonian formations and to the Carboniferous and Permian deposits; Johannessen has reached practically the same conclusion in Norway. In England Berry finds goitre only where there are chalk and sandstones of Triassic develop-

ment, while it is absent where there are eruptive rocks. Bircher comes to the conclusion that goitre only occurs where there are deposits, more especially marine deposits, of the palæozoic age; whereas where the rocks have been modified by internal heat and where the various deposits are of fresh water origin, there is absence of the condition.

There is a wide field for more thorough study of the geological incidence of goitre upon this continent. It is certainly remarkable, looking at a geological map of Canada, to see how the main goitre areas conform to the Silurian and Devonian deposits. From the peninsula of Ontario right down to Quebec the St. Lawrence valley on either side is mainly Silurian, the limestone deposits being only broken at the Thousand Islands, where a band of older Laurentian rock cuts across.

Further information is required as to whether goitre occurs in the Laurentians to the north (which, while of fresh water origin, are greatly modified by heat). In discussing with Dr. Adams, our Professor in Geology, and pointing out to him that according to my colleague, Dr. Springle, cases of goitre are occasionally met with occurring along the north bank of the St. Lawrence, even as far as Labrador,* he called my attention to the fact that occasional deposits of limestone were to be found here and there throughout that extensive Laurentian area, from Quebec onward towards the sea, and that notoriously wherever the limestone is present the districts are more fertile and there especially people tend to settle. Hence, if we do come across occasional goitre in the Laurentian area, very careful study has to be made of the deposits before it can be definitely stated that the disease occurs in areas purely Laurentian or over these later rocks. Thus there is an interesting opening for individual or collective investigation with regard to the distribution of the disease upon this continent, special attention being given to the geological formations over which the condition is frequent. Certainly with regard to Bircher's work, Kocher has brought forward evidence to show that his results are not wholly correct.

That the water habitually drunk has to do with the development of goitre is generally accepted, but *what* it has to do is still a matter of very considerable, nay, absolute, doubt. Certain wells, so-called goitre wells, appear especially to afford water, which, when drunk leads to enlargement of the thyroid and typical goitre. To the existence of these wells the Swiss more especially have called attention, and Kocher is a strong adherent of this connection between the water drunk and the development of the condition. Bircher gives an example of a village in the Aarau, Switzerland, which was at one time markedly goitrous, and which in 1884 put in waterworks, obtaining its water from a goitre-free region

* Vide Dr. Springle's article in the last number of this JOURNAL, p. 909.

on the other side of the river Aar. As a result, the percentage of cases of goitre among the school children in the village, diminished as follows:

In 1885, 58% affected	In 1886, 44% affected
In 1889, 25% affected	In 1895, 11% affected

Other examples almost as strong as this can be collected showing the relationship between the drinking water and endemic goitre.

As to what in the water leads to the disease, observations have so far led to negative results. The presence of chalk and magnesia has often been suggested, but numerous wells and waters rich in chalk and magnesia are found unassociated with goitre, and some of these, indeed, are found when drunk to be beneficial and to be associatel with diminution in the size of the enlargement. Several notorious goitre wells are completely free from these substances. The same is true with regard to waters containing sulphate of iron and copper, while feeding animals with various salts and metals has never been found to lead to the development of the condition. Of minerals, iodine has more especially of late years been suggested as associated with the condition, for Baumann's observations have shown the remarkable iodine-containing body present normally in the colloid substance of the thyroid. But even with iodine, there are several valleys and regions where the water is rich in it and yet goitre does not occur, and contrariwise iodine free springs are more common throughout the world than those containing iodine, and the majority of such springs are unassociated with the development of goitre. In fact, every individual chemical constituent of the water would seem to have been at one time or another studied and suggested as of possible etiological moment in this disease, and every one in turn upon further study has been found to have no relationship. This being the case, we are thrown back upon the possible existence in the water of some living organism.

Can we regard ordinary goitre as being of infective origin? In favor of such a theory not a few facts have been brought forward. Notably there is in addition to its curiously endemic nature, the infrequent but well-established occurrence of a sudden development of the condition in an epidemic form in large bodies of men, troops, etc. Thus Valentin recorded an instance in an infantry regiment which had for 5 years been established at Caen, and then went to Nancy. Here goitre had never been endemic and sporadic cases were rare. The regiment was for some little time at Besançon, and there only had come into contact with goitrous individuals. Within a few months no less than 38 members of the regiment showed goitre. During the next four years the number increased, 205 in 1784, 425 in 1785, and so on until altogether 1,009 soldiers of the regiment were affected, while the other troops in garrison there, with the exception of an occasional case in

one cavalry regiment, showed no cases. It is remarkable that here the officers who were in the same barracks and who drank the same water, were not affected. Similarly at Belfort, in 1877, out of a garrison of 5,300 men, there were no less than 900 acute cases of the disease. At Silberberg in Silesia, Haneke recorded, in 1820, the appearance of goitre in the garrison, and in the course of one year in a newly recruited battalion of 380 men, 310 presented the disease. Hirsch, A. von Humboldt and Virchow, all careful and thoughtful observers, years ago held that something of a miasmatic nature must lead to the development of the condition.

Some of the most remarkable observations upon this infectiousness of water were carried out by Lustig and Carle, who selected a horse and some dogs from a goitre-free region, kept them in another goitre-free region and gave them exclusively water from a "goitre well" to drink, The horse after some weeks showed definite enlargement of one lobe of the thyroid, and when this was extirpated, the other lobe enlarged, the enlargement diminishing when other water was supplied. So also with the dogs: 10 were given filtered and boiled goitre well water and remained free from goitre; 13 were given unfiltered water, and one least showed a well-marked enlargement of the gland. Furth goitrous dog taken from a goitre region, part of whose thyroid was extirpated anad showed characteristic changes, presented a marked reduction of its goitre to normal size when given filtered goitre well water to drink.

These experiments can at most be said to be suggestive; the number is insufficient for us to regard them as at all absolute. Nor when we come to examine the numerous records of bacteriological examination of these goitre waters do we arrive at anything but what is most unsatisfactory. Lustig and Carle, it is true, indicate a bacillus which liquefies gelatin and which has been constantly present in the goitre waters examined by them. Kocher points out that the goitre waters are distinguishable from the non-goitrous in Switzerland by the relative abundance of bacteria in them. Klebs found certain infusoria; Bircher a diatom together with polymorphous bacteria; while Waters recently has suggested that certain amœbæ are present therein, upholding a theory somewhat similar to the present rather popular sporozoon theory of cancer and malignant growths.

This mere recapitulation of unconfirmed observations shows that this bacterial or miasmatic theory remains to-day as it was 30 years ago—still a theory without any positive fact whereby to establish it. The most that we can say is that there is obviously some relationship between the water drunk and the development of the disease and that a microbic causation is well within the bounds of possibility. But even if we grant

that there is this possibility, it presupposes either that we are dealing with the entrance into the system of some toxic substance, produced by microbes in the alimentary canal and especially acting upon the thyroid tissue, or with infection proper. If there be infection, then it must be rather a remarkable character, for in the first place, the condition only shows itself in the majority of cases from the age of 8 years onwards, and in the second place if the individual be removed from a goitrous region sufficiently soon after the development of the disease and before chronic and cystic changes have ensued in the gland, then the tendency is for the enlargement to disappear. In other words, the infection if present must depend largely upon local conditions and does not tend to be progressive or self-propagating. We have, that is to say, to recognise a novel form of latent infection, if I may so term it; we have to suppose that so long as the individual remains in a goitrous region infection continues, and that the goitre is an indication of an imperfect neutralisation of the germs and their products: once the individual leaves the region, there being no longer infection, the destruction of the germ is complete and the thyroid eventually returns to a condition of equilibrium. Such latent or subinfection is possible, but in the absence of any positive evidence of the existence of any specific microbe, we have no right to base any theory upon its possibility.

Of more real and practical interest at the present moment is the *symptomatology* of goitre. Only recently is this becoming at all carefully studied, and the study, it has to be confessed, shows what at first sight appears to be a most contradictory series of disturbances. For on the one hand we not infrequently come across in the post mortem room, small goitrous enlargements of the thyroid, unrecognisable during life, and judging from the clinical history, absolutely unassociated with any symptoms, and the same is true of nodular goitres of fair size and causing a definite disfigurement in the neck. On the other hand, there may be very various symptoms present, and the puzzle is that at times symptoms referable to excessive production of thyroid secretion occur simultaneously with others which it is certain we should attribute to defective discharge of this secretion. Let me here attempt to recount and classify the main symptoms which have been observed :—

There are certain definite symptoms which may with certainty be ascribed to *Pressure*. From its position the thyroid when enlarged is liable to disturb the function of several important organs: the trachea, the œsophagus, the arteries and veins of the neck, and several nerves, as for example, the superior laryngeal (rarely), the inferior laryngeal, the posterior auricular, the vagus, the sympathetic, the cardiac roots of the sympathetic, the accessorius, the cervical plexus, facial nerve, and

the brachial plexus. Without taking into consideration the possible results of pressure upon all of these, we know with certainty that there may be grave pressure upon the trachea leading to dyspnœa and other respiratory disturbances; this pressure is generally lateral, but may be also from in front.

Even relatively small goitrous enlargements, if projecting backwards, may cause severe dyspnœa, and apart from mere dyspnœa, we frequently find distinct alteration in the voice, a rawness and want of tone. This may in part be due to compression upon the trachea, but Wölfler found more or less paralysis of the vocal cords in 10 per cent. of the cases he examined; Krönlein out of 191 subjects found 62 having a history of paroxysmal dyspnœa and 49 showing a definite disturbance of the voice; 7 of these 49, whom alone he was able to examine laryngoscopically, showed unilateral paralysis of the cords. Such paralysis is evidently due to direct pressure upon the recurrent laryngeal.

Pain behind the ear, which not infrequently occurs, has been ascribed to pressure upon the posterior auricular nerve; cramp in the neck muscles would seem to be due to pressure upon the accessorius; the compression of the large veins leads to congestion of the same and a certain amount of swelling of the neck and cyanosis of the face, while occasionally, though not as frequently as might be expected, there is a certain amount of dysphagia; where this is the case there is not infrequently enlargement of accessory lobes between the trachea and the œsophagus.

All these symptoms mentioned so far may with safety be ascribed to pressure and to pressure alone, but they far from exhaust the symptoms which may be noted. Frequently there are psychical disturbances. My own experience—and here I speak under correction—is that those having large and generalised goitres are in general dull, torpid, of low mental powers, not to say tending towards mental failure, and in addition they often show a rather special physiognomy, heavy, expressionless, and recalling strongly the appearances met with in those suffering from myxœdema. In this connection it may be called to mind that whereas sporadic cretinism is in general associated with atrophy and absence of the thyroid, where cretinism is endemic, over 50 per cent. of the cretins are goitrous—and cretinism is infantile myxœdema.

But, on the other hand, we have another series of cases in which the psychical disturbances, contrariwise, are those of mental irritation: at patients are highly nervous, sleepless, possessing a fear of impending trouble and unable to settle down to sustained work—symptoms, in short, closely resembling those found in exophthalmic goitre, and what is more interesting, when nodular goitrous masses are removed, as Dr. Shepherd* has noted, the symptoms rapidly disappear. They seem, in

* Vide his address in last month's number of this JOURNAL.

short, to be allied to what one finds in hyperthyroidism and in exophthalmic goitre or Graves' disease.

It is now some years since Dr. Shepherd called my attention to the existence of nervous and psychic disturbances which he had observed in several of the goitrous patients who had come under him for operation. It was impossible from his description to fail to recognise that these were of the same nature as those manifested in Graves' disease. Nor has this similarity escaped attention abroad. In France, Joffroy and Achard (*Arch. d. Med. Exper.* 5, p. 824, 1893) were among the first to call attention to this relationship, and have gone so far as to state that from an anatomical point of view there is nothing by which one can distinguish a simple goitre from the goitre of Graves' disease. (Though here I disagree with them.) They call attention to the frequency with which one sees the symptoms of Graves' disease developing in subjects who show a goitre of more or less old standing and of endemic origin. Clinical examination, on the one hand, does not permit the establishment of a radical separation between these so-called false exophthalmic goitres and the classic Graves' disease. Nor, again, therapeutically can any distinction be made, inasmuch as certain cases of Graves' disease are like ordinary goitre, aided by operative treatment. With Möbius they include the false exophthalmic goitre, so-called, along with true Graves' disease; for in Germany Möbius had already called attention to this relationship, and in a later article in Nothnagel's Specielle Pathologie, 1896, he dwells very strongly upon this same point. He divides the cases of exophthalmic goitre into, *primary*, in which the goitre and other symptoms of disease appear together; and *secondary*, in which the symptoms supervene upon an old ordinary goitre, and these secondary he regards as the more common, only differing otherwise from the primary in being usually of a more chronic nature and incomplete in the number of the symptoms shown. In these secondary cases we have everything from the mere simple case of goitre accompanied by palpitation and paroxysmal tachycardia, to goitre with palpitation and tremors, and to fully developed Graves' disease with persistent tachycardia, tremors, exophthalmos, Stellwag's sign, pigmentation, etc. More often in these secondary cases, from the large size of the goitre, there may occur definite symptoms which can only be referred to pressure, symptoms not necessarily present in the primary form.

It has been the custom to regard ordinary goitre and exophthalmic goitre or Graves' disease as two absolutely distinct and widely separate conditions. The symptoms of the former, when they have approximated to the latter, have been mainly ascribed to local pressure in the neck and have been disregarded by the majority of medical men. The

extreme care with which the symptomatology of exophthalmic goitre has been studied in England, France and Germany, as again on this continent, and the remarkable concatenation of diverse symptoms that has been made out :—tachycardia, exophthalmos, Stellwag's sign, von Graefe's sign, Möbius symptom (insufficiency of convergence), tremors, pigmentation of skin, paroxysmal diarrhœa, sleeplessness, mental irritability and other psychical disturbances, have almost inevitably led to this condition being regarded as a disease apart. Here I do not wish to indicate that the causation of the two conditions is identical, for my opinion is that the causation is absolutely different, but I do wish to emphasise the fact that the sharp limitation which is usually held to obtain between ordinary and exophthalmic goitre, is often non-existent, and that the one condition not infrequently is accompanied to a greater or less extent, by symptoms of the other.

What, then, are these symptoms which are allied to those seen in exophthalmic goitre ? As already stated, there are the psychical disturbances—nervousness, fearfulness, inability to take up sustained work and sleeplessness. Tremors, it is true, have rarely been noted, but this is possibly because no one has made the same careful search for them that Marie did for the existence of tremors in Graves' disease. Another very characteristic and not infrequent disturbance is paroxysmal dyspnœa, which is easily mistaken for asthma. These paroxysms have in general been ascribed to the catarrhal condition of the mucosa secondary to the pressure. Two sessions ago I brought before our Medico-Chirurgical Society in Montreal, a thyroid from a case in which the main feature was this history of paroxysmal dyspnœa mistaken for asthma. It was a case in which we found at post mortem enlargement purely of the middle lobe of the organ, scarcely recognisable in the stout neck, and which, while undoubtedly pressing upon the trachea, had not caused sufficient narrowing to satisfactorily explain the dyspnœic condition. At that time I suggested that the sudden vascular enlargement of this highly vascular lobe might give the adequate explanation. Dr. Shepherd has verbally reported to me a recent case of his in which operation upon a patient suffering from extreme dyspnœa of sudden onset revealed similarly an enlarged very vascular middle lobe, in which hæmorrhage had occurred, and had caused the same symptoms. But further study has convinced me that this explanation does not suffice for all cases. Some, like Lücke, doubt as to whether there is not here some central nervous disturbance also present. Something beyond mere pressure appears to cause the attacks—a something either of nervous or toxic origin. For these attacks frequently manifest themselves in the middle of the night and under conditions in which it is difficult to imagine any cause for the sudden enlargement.

It has to be kept in mind that just as in exophthalmic goitre, so here there may be characteristic heart troubles. We owe to Kraus the most recent study of the goitre heart. While he denies the relationship between the ordinary and exophthalmic goitre, he nevertheless points out very clearly that in the cardio-vascular disturbance of ordinary goitre, tachycardia is the most important symptom. According to him, the symptoms have two stages of intensity : 1st, increased action, more rapid pulse, with or without palpitation, the rate varying between 90 and 120, and occasionally becoming as rapid as 140 per minute. With this increase there is also a stronger beat of the heart, a heaving apex beat, a visible pulse, particularly in the carotids; in the radials this is large and rather soft and of a dicrotic character. The second group of cases of greater intensity occurs in long standing conditions or after repeated exacerbations, and now one has every evidence of dilatation of the heart, especially of the left side. Such cases at post mortem show sometimes no special hypertrophy of the organ, but in others there is a true hypertrophy. This, according to Kraus, is relatively frequent, and has associated with it a degeneration of the myocardium. Kraus' observations are based upon a long continued study of 15 cases of the disease; he calls attention to certain observations of Cyon, which show that removal of the thyroid gland leads to conditions in the organism which stimulate directly the nerve system and especially affect the sympathetic ganglia and the accelerator fibres of the heart. On the other hand, iodothyrin stimulates more the regulator or inhibitory apparatus of the heart and vessels. In the goitre heart, according to Kraus, one notices both these occurrences, namely, increased rapidity of the pulse and strengthening of the heart beat, and he concludes that in goitrous patients there is, through some disturbance of the gland, the simultaneous increased stimulation both of the accelerator and of the inhibitory nerve fibres of the heart, and that mere increase in thyroid secretion will not explain these.

But clearly the tachycardia and other vascular disturbances generally absent, or when present transient and of a moderate degree, seen in cases of ordinary goitre, are not merely those of pressure, and herein they correspond with the similar though more extensive changes seen in exophthalmic goitre.

Further, it has to be kept in mind that there may be a certain amount of exophthalmos in a case of ordinary goitre. Sometimes it is unilateral, and this unilateral development is perhaps best explicable by presupposing some pressure upon the sympathetic on that side. It is, however, doubtful whether exophthalmos is to be ascribed merely to irritation of the sympathetic nerves. Indeed, Askanazy's most inter-

esting study upon the condition of the muscular system in Graves' disease shows the development of marked degeneration of the muscles during its course,—fatty degeneration and fatty infiltration—which explain the tremors, the imperfect expansion of the chest (Bryson's sign), the imperfect convergence of the eyes (Möbius' symptom), and to a large extent, the exophthalmos.*

The above recital shows remarkably the very suggestive relationship between ordinary goitre and exophthalmic goitre; indeed, the one may pass imperceptibly into the other.

Yet before we can proceed to attempt to draw any conclusions with regard to the relationship between ordinary and exophthalmic goitre, there is yet another class of cases that is to be considered—that class which French writers have referred to as "Formes Frustes"—incomplete forms. On this continent it is Dr. W. H. Thomson, of New York, who has most persistently drawn attention to the existence of this class of cases, a class characterised by presenting to a greater or less degree the remarkable symptom-complex of exophthalmic goitre, without however any primary evidence of enlarged thyroid,—exophthalmic goitre without exophthalmos, and without goitre. These cases show the tremors, the wandering pains in the extremities, behind the ear and in the muscles and elsewhere, accompanied by more or less hyperæmia, often noted in exophthalmic goitre; they have most characteristically a condition of persistent tachycardia, the pulse varying from 90 to 120, while a further prominent symptom, equally a feature of exophthalmic goitre, is the occurrence of paroxysmal diarrhœa, diarrhœa coming on suddenly with no apparent cause, and disappearing with equal suddenness. Indeed, in most cases the first symptoms recognised are in association with the digestive tract. But these patients have neither goitre nor exophthalmos at first, although with the persistence of this condition for some weeks or months enlargement of the thyroid tends to supervene and sooner or later a definite condition of exophthalmos with von Graefe and Stellwag's signs tends to show itself. I have come across one such case. The symptom-complex is so remarkable, the pains present features differentiating them from muscular rheumatism on the one hand and from the ordinary neuroses on the other, so that the cases stand out as a very distinct group, the nearest approach to anything like them being met with in certain conditions of enteroptosis and wandering kidney, in which, again, the abdominal region of the disturbance is a prominent feature; and yet, as I say, it is only relatively late on in the condition that we obtain evidence of hypertrophy or other enlargement of the thyroid. That the thyroid has

* Vide extract in this JOURNAL in May, 1899, p. 357.

some relationship or is affected in this condition is shown by the fact that it is peculiarly liable eventually to undergo enlargement. The condition, in short, tends to develop into unmistakable exophthalmic goitre, and that being the case, I cannot but agree with Dr. Thomson that we have to include this series of cases in any consideration of the etiology of Graves' disease. But doing this, it is obvious that we are forced to see that thyroid enlargement is not to be considered as the essential primary feature in the latter condition. The more we consider the matter, the more obvious it is that no organ in the body, unless it be the seat of aberrant new formation, causelessly undergoes enlargement. Even when there is such aberrant new formation we are now more and more recognising that some stimulus must be there to induce the hyperplasia. There is something behind the hyperactivity and hyperplasia of the gland causing their development, and we have to look beyond the thyroid for the cause of exophthalmic goitre, a cause by no means necessarily the same as that of ordinary goitre.

Before proceeding to this search it will be well to sum up the main conclusions reached thus far: these would seem to be :—

1. That the causation of ordinary endemic simple goitre is directly associated with the water habitually drunk by the subjects of the condition.

2. That no single constituent or contamination has so far, despite extensive search, been found common to the waters of goitrous districts.

3. That the peculiar epidemics at times recorded, coupled with this lack of discovery of chemical or toxic cause, appears to indicate miasmatic, *i.e.*, microbic causation.

4. That if it exists, the microbic agent is yet to be discovered.

5. A long series of forms can be made out from, on the one hand, those showing well marked goitres with dulling of intellect and bodily habit approaching to the myxœdematous type, through goitres presenting no generalised disturbance, save occasionally such as may be attributed merely to pressure upon the surrounding organs, to other forms of ordinary goitre showing symptoms of the same order as those seen in exophthalmic goitre, to cases of true exophthalmic goitre, and finally, to cases showing no enlargement of the thyroid but certain of the general symptoms which are peculiar to Graves' disease.

It has to be confessed that so far these conclusions do not appear to hang very closely together, nor have we gained any thoroughly comprehensive view of the nature of goitre or of its relationship to Graves' disease—at most we recognise some obscure relationship between them, but at the same time we are forced to acknowledge that certain essential members of the Graves' symptom-complex can show themselves without any sign of thyroid enlargement.

Can we gain any further and surer basis for comprehending the relationship by a study of the anatomical changes found in these different conditions? I think we can, and in this study we find the key, if not to the whole problem, at least the key to the connection between these different forms of disease. It is now common knowledge that in myxœdema and cretinism we have conditions characterised by, nay, following upon, complete atrophy or loss of function of the thyroid, while, on the other hand, in typical Graves' disease, as Möbius suggested and Greenfield has clearly demonstrated, we have anatomical indication of the reverse, of hyperplasia of the thyroid tissue coupled with increased secretory activity. But the significance of the essential anatomical feature of the common goitre has not, I think, as yet been grasped. This common parenchymatous or colloid goitre is characterised by localised and lobular or by generalised distension of the follicles with dense colloid material. The individual follicles are greatly enlarged, so that the first impression given is one of actual overgrowth of the gland tissue. I will not say that such hyperplasia is not at times present, for I believe that it is, but this I will say, that in the main it is factitious and only apparent, the enlargement being due to a heaping-up of colloid material in the individual follicles,—a heaping-up so extensive that in enlarged glands we come across abundant evidence of a condition identical in nature to that observed in the emphysematous lung, namely, atrophy and absorption of the walls of adjacent follicles, so that large compound follicular cavities are developed. At the same time, the epithelium, instead of being cubical, or indeed of the lowly columnar type, as in the healthy gland, is flattened or even reduced to little beyond a string of nuclei, just as we find it in retention cysts. The histological appearance is not that of excessive activity of the glandular tissue, but, on the contrary, of obstructed function. In short, these goitres present every sign of retention and inspissation of the follicular contents.

We know further, by the observations of Hürthle and others, repeatedly confirmed of late years, that normally the contents of the vesicles find their way into the rich network of lymphatics surrounding the individual follicles, and it may be under certain conditions, into the almost as abundant network of the venous capillaries. For the thyroid is an organ rich both in blood vessels and lymphatics and, as pointed out long ago by Wölfler, these stand in especial relationship to the follicles. Now, just as in the emphysematous lung, the distension of the air sacs leads to flattening of the capillaries and their walls, diminution in the lumen of these capillaries, increased friction and resistance to the blood flow, and as a consequence to continuing atrophy of the walls of the air sacs, accompanied by imperfect respiratory function, so in the thyroid, distension of the follicles must tend to obstruction of the surrounding

lymph and blood vessels, and so must arrest the discharge of the colloid material. Or, to sum up, anatomically we have every indication that the *common colloid goitre is pre-eminently a condition not so much of hyperplasia and overgrowth of the specific thyroid tissue as of retention of the glandular secretion.* If this be the case, and the more I study material from such goitres, and the more I recall the appearances observed in material studied during the last few years, the more convinced I become of the correctness of this view, then it becomes possible to recognise the relationship between the different states already referred to. Briefly, we recognise the possible development of the following series of conditions :—

1. Disturbance of the thyroid so extensive as to lead to atrophy of the gland tissue, with the complete symptoms of *cretinism* (when occurring in the young), and of *myxœdema* (in the adult).

2. Disturbances (whether directly affecting the functional gland tissue or the paths by which the secretion of the same enters the general circulation) insufficient to cause destruction of the gland tissue, but leading to arrest of discharge of the specific secretion from the follicles and heaping up of the same throughout the whole organ :—*generalised colloid goitre with myxœdematous or cretinoid symptoms.*

3. Localised disturbance of the above nature, the remaining portions of the gland continuing to perform their functions normally :—*Nodular goitre with absence of general symptoms, but with possible symptoms due to pressure of the enlarged portions of the gland upon the surrounding organs.*

That a relative small portion of healthy thyroid can, after destruction of the rest of the gland, subserve the needs of the body, has been abundantly demonstrated by the observations of Halsted and others.

4. Localised disturbance leading to the heaping up and retention of colloid material in certain lobules of the thyroid, but with, in addition, the occasional occurrence of nervous stimulation or altered vascularity of the gland whereby increased absorption or discharge of the retained material into the circulation is favored: *Ordinary nodular goitre* with paroxysmal dyspnœa, paroxysmal tachycardia and other transient symptoms of hyperthyroidism or of Graves' disease.

If we are prepared to admit that the symptoms of exophthalmic goitre are largely due to increased discharge of thyroid secretion into the general circulation, then these symptoms manifesting themselves now and again in the course of ordinary goitre are best to be explained by this supposition that the retained secretion by some one or other agency undergoes transient liberation causing thus a temporary excessive discharge of the secretory substance into the general circulation.

5. Supervention of increased discharge of thyroid secretion into the

economy in a gland which is already the seat of ordinary retention goitre : *Secondary Graves' Disease, i.e.,* persistent tachycardia and other classical symptoms of Graves' disease following upon an ordinary goitre. As already stated, we are forced to recognise the frequency of this transition from ordinary to exophathalmic goitre. The occurrence, however does not imply that both conditions are due to one common cause. As a matter of fact, in regions where goitre is endemic, it is noticeable that we rarely come across well-marked examples of Graves' disease, so that we have almost a paradox that whereas so frequently in exophthalmic goitre we meet with the pre-existence of a nodular goitre, where goitre is endemic Graves' disease is relatively rare or not more common than elsewhere.

I have been not a little struck by the observation made to me by Dr. Springle, an observation which may possibly explain this apparent paradox. He has pointed out to me that whereas goitre is common immediately outside Montreal, in Montreal itself and in large towns and cities generally we rarely come across a fully developed goitre. Very possibly the water supply may be an explanation of this infrequency in Montreal itself. On the other hand, we do meet with cases of Graves' disease in this and other cities.

A case brought to my notice by Dr. Kinghorn, of Saranac Lake, N.Y., during this last winter appears to me rather suggestive. It was that of a young woman of 22, who since the age of 9 had had a recognisable goitre. Her mother was the subject of goitre from her early childhood, the goitre had become of great size after the birth of her second child, though later it had subsided until now all that is left is a mass the size of a hen's egg in the middle of the neck. One sister had been the subject of goitre at the age of 14, but it had subsided, and now it is not recognisable.

Until the age of 9 the goitre gave the patient no trouble; she noticed occasionally that it had increased in size, as do all goitres. At 19 she came in from the country, where she had previously lived in a very quiet place upon Lake Champlain, and became a waitress at a boarding-house in the little town of Saranac Lake.

The work was new to her, and, as she states, she was very nervous over it and very soon the goitre became large and nervousness more marked. She herself ascribed the nervousness and the goitrous enlargement to the change in her work. After a time she gave up working and returned home, when the goitre and all the symptoms subsided. Last winter she again came to Saranac Lake and went to help at her brother-in-law's store. This store is one of the largest in the little town, and further, had just been completely altered, so that she was

very actively employed. Now again the goitre rapidly enlarged and palpitation came on, and when seen by Dr. Kinghorn she had definite symptoms of Graves' disease, tachycardia, exophthalmos, Stellwag and von Graefe's signs, palpitation and dyspnœa on exertion. The right lobe and the isthmus of the thyroid were principally enlarged. In addition, she had been liable to vomit, the vomiting coming on suddenly after each meal.

May not the more active life of the dweller in a city in part prevent the development of ordinary goitre, and, on the other hand, may not increased nervous irritation, telling upon an organ which is already somewhat disturbed in its functions, favor the development of the abnormal activity of that organ and the development of Graves' disease ?

What is very remarkable in the ordinary colloid goitre is that the specific thyroid tissue even in the most advanced colloid goitre still persists and is recognisable, despite the distension of the follicles ; the glandular tissue appears arrested in its function, but not destroyed. It is thus, anatomically speaking, within the bounds of possibility that such glandular substance should under altered conditions, take on active or over-active functions, and as a matter of fact, clinically, goitres with myxœdematous symptoms have been seen to develop into secondary Graves' disease.

6. Increased activity of the thyroid gland with hyperplasia and enlargement of the gland:—*Primary Graves' Disease* with accompanying enlargement without retention, and exophthalmos.

7. Relative or absolute increased activity of the thyroid gland without at first any recognisable enlargement of the organ:—*Formes Frustes of Graves' Disease.*

With reference to this part played by the relative or absolute increased secretion of the gland, I would refer to my previous paper upon the Internal Secretions which I gave at Washington in 1897.* I may here note that only recently my colleague, Dr. Armstrong, operated in the Montreal General Hospital upon a case which all recognised as one of definite Graves' disease, but when the thyroid gland was exposed, while it was of fair size, it certainly did not exceed in its dimensions what may be regarded as normal.

The above table, it will be seen, recognises that the essential cause of Graves' disease is something apart from the essential cause of ordinary goitre, and that Graves' in itself primarily depends upon some nervous or other stimulus acting upon the thyroid gland and leading to increased activity and increased secretion. The sudden liberation of

* Transactions of the Congress of American Physicians and Surgeons. Vol. IV., 897, p. 103 and this JOURNAL, Vol. XXV., p. 856, 1897.

some of the retained secretion is best calculated to explain the paroxysmal disturbance of the "Graves'" type often met with in the course of ordinary simple goitre, as again does sudden increased discharge or absorption explain the disturbances seen in the course of Graves' disease itself, as well as the dangerous and sometimes fatal results following the operative handling of the diseased gland.

In the course of this short address I am unable fully to discuss the extraordinary variation which we come across in the histology of the goitrous thyroid—the degenerative and interstitial changes, the development of cysts (which in my laboratory at Montreal has been more especially studied by Dr. Bradley,*) the apparent and at times real hyperplasia of the gland, or again the development of actual malignant growth, whether carcinomatous or sarcomatous.

Nor again have I time to take up the vascular forms of goitre to which Virchow was the first to call prominent attention. These essentially vascular forms I have not come across; I have only noticed that in ordinary goitre there may be accompanying great vascularity. I can only suggest that the remarkable dilatation and enlargement of the arteries in the thyroid which Virchow so frequently met with, may in itself be an evidence of the obstruction to the perifollicular circulation brought about by the distention of the follicles. With regard to the cystic formation so frequently met with, I would point out that cysts in the thyroid having fluid contents are always of degenerative nature, and in the majority of cases follow localised hæmorrhage; as such they do not in themselves induce any of the generalised disturbances above mentioned, at most they case pressure symptoms. This has been very clearly pointed out by Dr. Shepherd.

Despite all the work that has been done of late years, the very multiplicity of the changes which occur makes it impossible to enter into a discussion as to the relative frequency of occurrence, and again as to the meaning of these various changes, nor again are we prepared to comprehend all of them. This much, however, may be said, that by far the commonest, in fact the common type, of ordinary goitre, is the colloid or parenchymatous. This form indeed must be taken as the type, and taking this as type, we can, if we regard it as essentially the result of obstruction and retention, gain some comprehension of the symptomatology of the condition.

* Journal of Experimental Medicine, Vol. I., p. 401.

ELECTRICAL BURNS.*

BY

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Surgeon to the Montreal General Hospital ; Lecturer on Applied Anatomy, McGill University.

My attention has been directed to this subject by two cases of severe burns, from contact with a "live wire," which I had in my Wards at the General Hospital during the past summer. These burns differed so much in their behaviour from other burns of an apparently similar degree of severity, that I looked up the literature of the subject as carefully as I could, and thought that a communication on the subject might prove of interest to the members of this Society. Electricity is now in such general use that the general medical practitioner must be prepared to treat intelligently any accident, due to it, which may befall any of his patients ; and I was somewhat astonished to find very little on the subject in such surgical literature as I had access to.

The "Year Book" for 1899, directed my attention to an article on the subject of this paper, published in the Philadelphia Medical Journal, January 29th, 1898, by Dr. Sharpe, of St. Louis, Mo., in which the author, who was surgeon to several large Electrical Companies, gives an excellent summary of the chief clinical features of Electrical Burns. Dr. Sharpe's remarks coincide, in the main, with my own observations in the cases I shall cite, and therefore, with your permission I shall quote Dr. Sharpe's conclusions, adding, as I go along, any differences I may have noticed.

1. *As to appearance.*—"The burn is at first dried and crisp, (even charred in many cases), the site being excavated and bloodless, with a surrounding zone of pallor. Within 36 to 48 hours, this picture will completely change ; oozing will replace the dryness and the pallid zone will become hyperæmic." In other words, I would remark, all the symptoms of moist gangrene will set in, followed by rapid formation of slough with a peculiarly fetid odor. Much the same sort of picture, at first, as we are familiar with in severe frost-bites.

2. *Pain.*—"Is as a rule very moderate, in some cases practically absent ; from 24 to 48 hours after contact it is usually present."

From this view of Dr. Sharpe's I am forced to dissent. It may be true in very slight burns, as I have no experience of these, both of my cases having been severe ; but both my patients suffered very greatly, all through the prolonged period of sloughing, needing opiates constantly to enable them to get even a little rest.

* Read before the Montreal Medico-Chirurgical Society, Nov. 3, 1899.

3. *Shock.*—"Electric burns differ from other burns, in that the systematic shock is from the contact—the shock from the burn, *per se*, being nil." My experience differs here again. I found that in electrical burns, as in others, the shock was considerable, depending on the amount of tissue involved, and further, that the shock continued for a much longer period, due, no doubt, to the prolonged sloughing of adjacent tissues.

4. *Prognosis.*—"In regard to time, electric burns average 1½ to 3 times as long in recovery as do other burns. In severe cases, even 5 times as long. Prognosis of result is as uncertain as time-prognosis; . . . . usually, both mild and severe cases are tedious and prolonged." With these views I heartily agree. The tissue lost is in the prolonged sloughing, which no treatment serves to hasten—not even amputation—and one must wait patiently until healthy granulations replace the fetid sloughs before any prognosis as to time, or as to result, should be given; after that, as I shall show you, we may reduce the time very much by skin grafting.

5. *Subsequent manifestations.*—Dr. Sharpe says, "the rule of the electric burn, is, that it changes within 36 hours from contact, to a serum-saturated area, with disintegrating walls and floor, progressing to profuse purulent secretion, with continued tissue degeneration. This degeneration will frequently involve nerve, muscle, tendon, joint capsule, ligaments, articular surfaces, periosteum and bone itself; exuberant granulations springing up, the entire plain bathed in pus, completing a picture alike distressing to patient and surgeon." So far as I have been able to observe the sloughing affected mostly the muscles and blood-vessels. The bones, other than those actually charred, not being markedly affected, and I saw no evidence of osteo-myelitis higher up. The nerves, too, appeared acutely sensitive, but the great sloughing suggested some great interference with the trophic fibres to a considerable distance from the point of contact. As regards the blood-vessels, the walls appeared to be affected for a considerable distance up the limb; and during the period of sloughing, one must constantly guard against secondary hæmorrhage. This untoward accident is also favored by the fact, that the *blood showed no tendency to clot* in these burns; and this, I understood from Dr. Wyatt Johnston, is a well marked post-mortem feature of the blood of those who have been killed by electricity.

In one of my cases, while dressing the wound, an artery spurted very freely in a granulation at some distance up the limb from the point where I had amputated some weeks previously.

My experiences, then, would lead me to conclude, that the ascending degeneration following on severe burns by electricity, affects chiefly the

striped muscle tissue; and that the original area of injury gave one very little idea as to how far the process would ultimately extend.

And now *as to treatment*:—I quite agree with the author quoted when he says, "it is very unsatisfactory." I pursued the plan of keeping the parts immersed in a warm carbolic bath of 1-100 strength. Even then the disagreeable odor was most marked, and I know of no class of cases, except crancrum oris, so difficult to disinfect. The bath was carefully watched for any indication of hæmorrhage, as the necrotic process went on ; an Esmarch was left at the head of the bed, with instructions to apply it at once, if bleeding began. I mention this because I had hæmorrhage in both cases, and, as the patients were both greatly reduced in strength by the sloughing, with its consequent fever and pain, I believe that the prompt application of the Esmarch by the attendant turned the scale in the patient's favor; and enabled both to withstand the shock of the subsequent amputations. Next, when forced to do so by secondary hæmorrhage, or by a well marked line of demarcation having formed between the necrotic and the apparently sound tissue, it is our duty to remove the sloughing tissue even if it means an amputation. And here I wish to emphasize this point, that the amputation should not be done as in ordinary cases of burns or injuries requiring operative interference. Ordinarily, if we form our flaps well above the line of demarcation, we may sew them up and expect primary union. But not so here; we must expect sloughing in the stump; not perhaps of the skin itself, but of the muscles even as high as their attachments. We should simply excise the necrosed portions along the line of demarcation, and then leave the wound open, to be dressed by moist antiseptic dressings. In both of my cases of amputation through the forearm, I did a simple circular amputation, made no attempt to form flaps, and the stump had to be left to granulate, and subsequently was skin-grafted. I am convinced from a former experience that any attempt to sew up the wound, in the ordinary way, would have resulted disastrously to the patient; as after the amputations whole muscles come away and large areas of skin above the point of amputation sloughed. There is altered nutrition—a local atrophy—due to the influence of electricity on the tissues, and one, therefore, cannot count upon the vitality of the flaps. Not uncommonly, owing to the retraction of the soft parts resulting from sloughing, it is necessary to resect the bone before skin-grafting.

The result of those excised where no skin-grafting was resorted to, was similar to that obtained in other largely denuded areas; and the skin-grafting gave good results.

There are several very interesting side issues arising from a study of these two cases, and I shall only refer to them briefly, in the hope that

some member who is better versed in the study of electricity than I am may throw some light on what is, to me, a still unsolved problem.

1. Why does the burn take place at the points of entrance and exit of the electrical fluid (if one may use the analogy of a bullet), and the intervening tissues—many of them vital—not be affected to any appreciable extent ?

2. Why does the application of an electrical current, of say 600 volts, prove fatal in some instances, while in others, e. g. case II. above, a current of many times that strength simply inflicts severe burns, but does not produce any serious or prolonged direct vital effect ? And why, again, in many of the fatal cases, should there be almost no mark, or other sign of burn, while in cases such as I have cited here, there should be such extensive burning as to necessitate amputation ? These are questions which I am still studying, as they are of great interest, not only theoretically, but practically.

To this subject I hope at some future time to return, but at present I have nothing positive to offer, and moreover, I doubt if such information could be classed under the heading of Electrical Burns.

Case I.—[Notes by Dr. R. M. Patterson, House-Surgeon, Montreal General Hospital.]

H. S., age 15. Patient was brought to the hospital June 22, 1899, and gave the following account of his injury :—

He had been astride a steel rod on the roof of his house and had reached up and grasped the main wire carrying current for the electric lighting of the streets. He thus short-circuited the current and got the full force of the discharge—2200 volts—then on the wire. He was unconscious for from three to five minutes until he could be moved from his perilous position.

Examination.—The patient is very pale, fine perspiration on the forehead, extremities cold, pulse small and rapid, pupils both semidilated. The symptoms are those of severe shock.

Nature of injuries.—(1) Right hand completely charred with all the soft parts shrivelled up and all the joints opened; the digits turned back in position of over-extension. From hand up to a point within one and a-half inches of the elbow joint, the burning varies from fourth to first degree. (2) Left hand has two deep, fourth degree burns, one on the thenar and other on the hypothenar eminence. (3) Whole of the penis and scrotum are œdematous and burnt in many places quite deeply (4th degree). The inner and anterior aspect of the left thigh in its upper third is also severely burnt. It will thus be seen that the most severe burn was at the point of entrance of the electrical fluid (the hand) and again very extensive but not quite so severe at the point of exit or neutralization.

Treatment.—Patient was given frequent hypodermics of morphine alternating at times with strichnine, and this had to be kept up for a very long time. He had to be frequently catheterized for retention, due doubtless to the mechanical blocking up of the meatus urinarius by the burning and swelling. The arm was immersed in one per cent. solution of warm carbolic lotion and fomentations of the same applied to the perineum. Later, this was changed to formalin, 1-1000, with a view if possible to lessen the extremely offensive odour of the sloughs. The formalin soon caused such pain that a solution of hydrargyrum perchloridum, 1-10,000, was substituted. The diet was liquid, as nutritious as possible, and food was given every two hours.

The areas surrounding the burns were soon covered with large moist bullæ and these were soon succeeded by a very offensive, moist gangrene, with formation of very extensive sloughs. There was also present a severe cystitis on the fifth day after admission. On the tenth day after admission there was a profuse hæmorrhage into the bath in which the injured right arm had been kept immersed. An Esmarch bandage checked this and the limb was removed from the bath, bandaged and elevated. A special nurse was detailed to watch for any recurrence. The pain was very great and patient was very weak and blanched. Amputation was decided on, and forthwith carried out. A simple circular amputation was performed one and one-half inches below the elbow, so as to save the insertion of the biceps. Some of the muscles left in the stump could be seen to be infiltrated, and these afterwards sloughed as high as their insertions to the internal and external condyles of the humerus. No effort was made to close the wound which was dressed with a one per cent. carbolic dressing. The whole stump was finally covered with healthy granulations and the patient finally had good use of his elbow joint. The temperature never rose above 101°F. at any time, and rarely above 100°F.

In the meantime the perineal wounds were progressing favourably, healthy granulations replacing the sloughs which had separated; the testicles were almost bare and a nipple like process with the urethral orifice at the summit was all there was to represent the penis. On August 7th, in the absence of Dr. Eider, skin-grafting of the granulating areas of the stump, the arm, and the perineum and thigh was performed by Dr. J. Anderson Springle, following Thiersch's method, and the result was in every way satisfactory, the patient being able to leave the hospital on August 23rd. He is now quite well, has no difficulty in urinating, and the stump of the arm gives good motion at the elbow to a false forearm and hand.

Case II. [Notes by Dr. W. L. Barlow, House-Surgeon, Montreal General Hospital.]

T. V., aged 25, was brought to the Montreal General Hospital by the ambulance on August 30, 1899, suffering from severe electrical burns. The history of the accident is as follows :—

While walking down one of the passages in the power house of the Montreal Street Railway, the patient's foot slipped and in the attempt to save himself from falling he put out his right hand, which came in contact with a terminal from the main line at Chambly. Patient states that at the time the indicators registered 60 amperes at 10,000 volts. The shock he received rendered him unconscious for about two minutes, and when he recovered consciousness he was lying about six feet from the terminal. On attempting to get up he found that his right arm was powerless and that his fore-arm and right hand were in a position of extreme flexion, and were found so on admission to the hospital. Loss of power was also present in the lower extremities. When brought to the hospital, he was in a well-marked condition of shock.

The fingers of the right hand, as well as the hand itself, were charred, while from the level of the wrist joint to about half way up the fore-arm there was a purplish red discolouration. This became less marked as it reached the upper portion of the fore-arm and had an ill-defined irregular outline. On the inner surface of the right arm, about the level of the insertion of the deltoid, there was a deep burn through skin and subcutaneous tissue exposing the deep fascia. (See Fig. I.) The toes of the left foot were blanched and cold, while three inner toes of the right foot were in a similar condition. The dorsal surfaces of the feet were also involved, but here there was only an erythema, as of a burn of the first degree, save for about one inch above the meta-tarsal phalangeal articulations, where there was the same purplish-red discolouration as on the fore-arm of the left upper extremity. Scattered over these areas of discolouration, vesicles had already appeared, which later coalesced and formed large bullæ. (See Figs. II. and III.) There was marked swelling of the left fore-arm and of the feet.

Treatment and Course of the Case.

On admission, strichnine $^1/_{30}$ gr., and morphine $^1/_8$ gr. were given hypodermically. Half an ounce of whisky was given every three hours and the hand and arm immersed in a hot carbolic bath, 1-100, and the feet wrapped in hot carbolic fomentations, changed every two hours. There was retention of urine. During the first 24 hours the pain was very severe and morphine, gr. $\frac{1}{2}$, hypodermically, with also phenacetin gr. v, and caffeine gr. iiss, chloral hydrate, gr. xx, and potassium bromide, gr. xxx, were given at different times to secure rest.

On September 4th, a sharp hæmorrhage took place into the bath from the radial artery of the right arm. The sloughs were very fetid

in both the arm and feet, and it was seen that he would evidently lose his fore-arm and all the toes of both feet. As the bullæ burst or were punctured, deep sloughing areas were exposed. The sloughing was most marked where the discolouration had been most pronounced and had involved the muscles. There was never any definite line of demarcation.

On September 5th, six days after admission, his right fore-arm was amputated at the junction of the upper and middle thirds. As much tissue as possible was saved, the wound being left open for complete drainage and to allow all necrotic tissue to be removed at each subsequent dressing. As there was no definite line of demarcation and no guide as to the probable extent of sloughing, it was thought advisable to pay no regard to flaps, but after all the sloughs had separated and granulation taken place, to skin-graft the stumps.

The integument, superficial vessels (which were thrombosed), and most of the muscular part of the biceps just above the antecubital space, were destroyed, presenting a sloughing area which was thoroughly scraped and swabbed with carbolic, 1-40, and afterwards with normal saline. The sloughing area on the inner surface of the arm at the insertion of the deltoid was treated in the same way. The great, second and third toes of the right foot were amputated at the metatarsal phalangeal articulations and the heads of the corresponding metatarsal bones snipped off. All the toes of the left foot were amputated in the same way and about half of the metatarsal area exposed on the dorsum of the foot. Dressings of hot carbolic fomentations were ordered to be repeated every four hours, for 24 hours.

After a prolonged period of sloughing, affecting chiefly the muscles and associated with a tendency to secondary hæmorrhage in the stump of the arm, healthy granulations at last appeared. Skin-grafting of the stump of the arm was done by Dr. J. Alex. Hutchison, 36 days after the amputation or 42 days after admission. The skin-grafts of the arm have taken very well indeed and the right foot has healed by the usual method of granulation and cicatrization. The dorsum of the left foot, however, Dr. Hutchison tells me, will need to be grafted. The patient, at the time of writing, is well and hopes to be soon discharged from the hospital.

ELECTRICAL BURNS.

FIG. I.—T. V., Right Arm, 4th day after injury.

ELECTRICAL BURNS.

FIG. II. T.V., Left Foot, 4th day after injury.

ELECTRICAL BURNS.

FIG. III. T.V., Right Foot, 1th day after injury.

WEST AFRICAN MEDICINE.

BY

CHARLES G. L. WOLF, M.D.

The West Coast of Africa is probably unique in containing the elements of civilization lying more closely to those of utter barbarism than any other part of the world at present, and in the course of a recent trip along the coast I had, accordingly, good opportunities for studying both native and European medicine as practised there.

Among the white population the disease which far and away overshadows all others is malaria, and the man who visits the coast in a medical capacity will probably find that in the course of a few months he will acquire a more extended acquaintance with this disease than he would in years in any of the more malarious districts of Europe or America. It is safe to say that no one who has lived on the coast for more than a year has escaped infection. It is curious, too, in how many ways patients are affected. It is not an uncommon thing to find a new comer attacked in the course of his first few weeks there, and this attack may be of varying severity, causing death in not a few instances, and in other cases simply confining the patient to bed for a night.

Very often one escapes for periods ranging from six months to a year, and while congratulating oneself on one's immunity, an attack will suddenly come on in the midst of what is apparently the best of health. It can also be said that the attacks which are delayed are usually of a more severe character than those which take place shortly after coming. Whether this is due to a generally low condition incident to living in a climate of the character of the West Coast or to an accumulation of the malarial infection it is impossible to say.

There are two grades of fever, which are very distinctly separated by African medical men.

The first corresponds clearly to what is known as malarial fever in this country. It sets in with general malaise, which is so well recognised from any previous attacks that the patient will at once take precautionary measures long before the initial chill sets in.

This is followed some hours or even days after by a sharp rigor, during which the temperature and pulse will rise, even with the outside temperature over 100° F. The patient will find hot drinks, heavy blankets and hot water bottles insufficient to cause sweating. When diaphoresis does take place it is usually of a most profuse character, and it is not uncommon to have a woollen covering completely saturated with perspiration. If quinine has been administered at the onset

in divided doses aggregating thirty grains in the twenty-four hours, it will usually be found that the succeeding chill will be much less pronounced or often be absent. The pyrexia, however, continues for some days, causing as a rule but little inconvenience. This is the course of an ordinary attack which may, as has been said, confine the patient to bed for a couple of days and in many cases is hardly heeded by those who have been long on the coast.

The treatment is scarcely varied, and consists in the administration of a preliminary dose of almost unlimited quantities of hot spirits and a preliminary dose of fifteen grains of quinine with perhaps antipyrin or phenacetin. It seems to be a very much disputed point among the West Coasters whether the administration of the latter is helpful or the reverse. Personally, I found that although the antipyretic had no effect on the course of attack, the headache and muscular pains which invariably accompany it are very much relieved.

The opinions as to the amount of quinine to be given during an attack seem to be as diverse as those concerning the use of an antipyretic, and I am told that among the Zambesi on the East Coast it is no uncommon thing for a man to take the enormous amount of 360 grains per day. That this is not only unnecessary but absolutely courting disaster seems to be the general opinion of the more advanced medical practitioners who have had much experience in this sort of thing.

The most dreaded type of malaria to be found on the coast is known as black water fever, and is now being investigated by Fenton of Old Calabar. This sets in as an ordinary fever, but is soon recognised by the severity of pain in the lumbar region and by abnormal hyperpyrexia. The urine soon shows signs of clouding, and passes from dark yellow through wine colour to absolute blackness. The temperature is not uncommonly above 106° F., and has been known to reach 111° F. Death almost certainly follows collapse. The examination of the urine seems to point almost exclusively to a hæmoglobinuria, as very few of the organized constituents of the blood are to be found.

The treatment of severe cases of malaria has been found to be practically identical with that of Brand, and the percentage of deaths has diminished remarkably with the use of cold water either in the form of baths or as packing. In most places the temperature of the drinking water is never below 75° F., but even here it is found that a bath at this temperature is most effective in bringing down the pyrexia and in calming the patient generally.

The statement made by Kock, that quinine is the direct cause of black water fever, seems to have been made on insufficient grounds, and it is unlikely, that for some time at least, that any medicinal agent, synthetical or otherwise, will supplant it.

One of the most interesting diseases which has afflicted the white population is known as "craw-craw." This is a very intractable form of eczema which seems to follow bathing in rivers not too far inland to be unaffected by the sea. It is probably of an infective character and seems more particularly to affect the thighs and genitalia. It is not at all confined to the white population, for some of the most distressing cases I have seen were among natives. Here, where no measures were taken to check the disease, the whole of the body and face was patched with areas of infection, the eyes nearly closed with scabs which form on the upper and lower lids. As in ordinary eczema, all remedies tried have but little effect, except that by careful watching the disease is to a great extent checked, but when once it has started it seems to be one of the most difficult things in the world to effect a cure.

All along the coast, but also in the interior, the chief factor in native medicine seems to be the Ju-Ju or medicine man, who holds a position in the tribe perfectly similar to that of the medicine man of the North American Indian. To him are brought all cases of sickness of whatever sort, and he also prepares the thousand and one fetishes which are supposed to bring good luck or otherwise on the bearer. Added to this somewhat wide sphere of action he combines under the king the function of priest and hence is the prime mover in all religious ceremonies. What his real knowledge of medicine is seems to be very difficult to get at.

I had a number of opportunities of meeting some of them and of inquiring of medical men who had been many years on the coast in official positions, and were therefore in the best position to get the desired information, but none of these were able to afford very much of a definite nature on the subject. Naturally, anything which is so much shrouded in mystery as their art purposely is, is difficult to get at, especially by foreigners, who are always to a greater or less extent objects of mistrust. Whatever may be said of the simplicity of his medical armamentarium does not describe his knowledge of toxicology, and it is safe to say that nowhere in the world has poisoning been brought to a finer point than on the West Coast.

The negro is by nature of a revengeful disposition and, when once started, does not stop at half measures to achieve his end. By far the most frequently used toxic agent on the Coast has been, until very recently, the Calabar bean. This grows wild in many places, and hence is within the reach of all. By making a decoction of the bean the native is in possession of an almost immediate poison which is used with great success. To such an extent was this in demand that in the open market of Sierra Leone the beans were sold for a small price. These were used not only for the purpose of human poisoning, but also

it is said for destroying horses. It is a strange fact that it is practically impossible to keep a horse in Sierra Leone, for the natives so fear their introduction and the consequent loss to themselves in the work of carrying, that every horse which has been brought there has come to a speedy end.

The only antidote to eserine poisoning which has proved in any way successful has been the hypodermic injection of apomorphine which was practiced first, so I was given to understand, by Dr. Allman, P.M.O., Niger Coast Protectorate of Old Calabar. At present any native found with the bean in his possession is sentenced to a long term of imprisonment.

Of the other infusions which are used to bring about death the next two most commonly employed are those of sass wood and the strychnos bean.

Sass water is used principally in cases of ordeal, and should one native have a grudge against another of such a nature that he believes one or other must die, his method is to ask his foe to "drink sass water." This takes place with appropriate ceremonies and usually ends by both succumbing. Should the sass water induce vomiting, as it sometimes does, the participant recovers, not, however, without suffering for some days from the effects. The poison is a general paralysant and the victim dies from cardiac paralysis.

Two other methods deserve notice, both for their ingenuity and also by reason of their being little known. The first is used on the Gold Coast to a greater extent than elsewhere and with very eminent success. It has the merit of being hard to detect and harder still to treat. Here the assassin uses small quantities of pounded glass with food, which is administered for periods ranging from a week to a month. This produces a most intractable form of enteritis which in the end usually kills.

The second method is the introduction of mud from mangrove swamps mixed with some finely-powdered gritty substance into shoes or boots. Mangrove mud seems to contain large numbers of tetanus bacilli which eventually cause symptoms of tetanus poisoning with invariably fatal results. This method is used in the Protectorate more than in the other colonies, and, from what I could learn, seemed to be a very great favourite with the natives there.

Of the diseases from which the natives suffer much could be said and, as far as I have been able to find, no book, as yet, has been written on the subject.

The average West African negro is not very long lived, and although from seventeen to thirty is as a rule a magnificent specimen of manhood, rapidly degenerates from that age upwards, so that it is rare to find one who has reached the age of fifty, most of them dying before

forty-five. Specific disease is rampart amongst them and pulmonary complaints, induced no doubt by the constant exposure in a hot humid climate, and any of the native hospitals is sure to contain a goodly proportion of patients in various stages of pulmonary tuberculosis.

The last feature which deserves notice is the evident crudity of native obstetrical methods, as is shown by the large percentage of umbilical herniæ; and one is sure to find among a crowd of boat boys examples of this condition showing protrusion from the size of an egg to that of a hard hat. These herniæ do not seem to incommode their lifting power in the least.

Among the natives the influence of natural medicine is rapidly losing its power and the out-patient clinics of any of the hospitals is crowded with patients eager to try the influence of the "white man's Ju-Ju" against their own; and it is safe to say that before the next fifty years have elapsed native medical treatment in the European towns along the coast will have become nothing more than a tradition.

THE PLACE OF PHYSICAL TRAINING IN A SCHOOL SYSTEM.

BY

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The last twenty years have seen many great changes in our ideas of School Education in Canada, and among the most notable has been the endeavor to meet the new conditions of school life that have arisen, due to the rapid growth of our cities and towns.

This might not seem to have much direct bearing on school life, at first sight, but new series of problems arise as soon as many people have to live in a confined space, and that specialization or division of labor appears which is forced upon the dwellers in cities. Such questions as drainage, water supply, ventilation, fresh air and exercise then assume an importance that is almost incomprehensible to those whose lives are spent in the freedom and physical activity of country life, and it is little wonder that we find a certain hesitancy, to use a mild term, in attacking such questions, and that we are met so often by the remark, that has done duty so long and so often, that what was good enough for our fathers and ourselves is good enough for the present generation of children.

Our cities and towns are of such recent growth, that this attitude must be expected, but with a wise holding on to that which was good in former days there should always be linked broad liberality and alert agressiveness in the meeting of these new questions which naturally did not appeal with the same force to the educationalists of fifty years ago.

We find, then, but few scattered notes on the subject of physical education in looking over Canadian School Journals and Reports of former years. The boisterous out-door games of the play ground, or the village common with its saw-dust ring, a relic of the travelling circus, the long tramp to and from school, the evening hours at the wood pile or the garden or harvest field made up the day's work to the great majority of children with Saturdays in the woods, on the river or in the swimming pool, and the open sky and the broad fields were the only limit of the gymnasium that had to counteract the effects of the hours of confinement to ill-ventilated and badly-heated buildings.

That these disease-producing conditions were the rule, I find strongly brought out by an essay on school buildings, happened on in looking over a Provincial School Report for the year 1878.

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* Read before the Provincial Association of Protestant Teachers, Oct. 14th, 1899.

I quote from it a paragraph in the writer's own words. He says :—

" One might suppose from the shattered condition and ill-accomodation of many school-houses, that they were erected as pounds to confine unruly boys, to punish them by way of freezing them and smoking them, so that the master can do little more than regulate the ceremonies of the hearth."

Thanks to the march of Sanitary Science and improved methods of ventilation and heating this could not now be said with truth about very many of our school houses, although my own school days recall buildings that answered to the essayist's description in more than one particular.

The present day brings the city child under totally different conditions, his home is on a built-up street, his play ground is the sidewalk and the roadway with the luxury of an occasional vacant lot. The various duties of the house that fall to the country boy, " the chores," are abolished or done by servants. The wood comes to the house sawn and chopped or comes in the shape of coal. The telephone runs the messages—and even the policeman strives to suppress the outward evidences of the boy's animal spirits that may threaten to interfere with the peace of the community, however valuable their display may be to the boy, from a developmental standpoint.

The Y.M.C.A.'s are trying to supply this want of exercise by their boys' classes, and are doing good service, but should not this work be provided for in every well-organized system of school education ?

The growth of the body must be completed in less than twenty-five years, and the years of most rapid growth are those of school life, between 8 and 17. It is in these years that the nervous system is trained to co-ordination, that the senses receive their strongest and most lasting impressions. It is in this time that the ossification of the bones goes on with greatest rapidity and that the muscles are trained to do the work that becomes automatic in the adult. This period takes the child through the changes of puberty when the body takes on the characteristics of manhood and womanhood.

At this period of life the greatest care must be exercised over the health lest the permanent stamp of disease, deformity or neglect be left on the grown man. The paramount questions must be those of good feeding, healthy surroundings and abundant bodily exercise, avoiding the dangers of overstrain, both physical and mental. Forcing and overwork in the growing child of 14 will certainly be visited upon the defective or enfeebled man of 40.

If physical training is neglected or deferred at this critical time its influence can never be replaced, no matter how hard we strive later on. The opportunity is gone beyond recall. Let us examine the conditions under which the child passes these years when the body like a cast is

hardening in the mould, acquiring the fixed form it is to have throughout life.

He sits, from 3 to 5 hours daily, on a seat more or less well-fitting, at a desk which is often too high or too low for his needs. This fixed position must be retained with but few intermissions.

In the natural condition a child, like all young animals, is in constant motion, and any prolonged fixity of position causes fatigue out of all proportion to the cause, as it appears to the grown man. This vital necessity for almost constant movement, is part of the process by which he grows, and anything that interferes with it, interferes with his complete growth and development.

Hence we find that the weaker ligaments and growing, plastic bones soon tire under the strain, the back curves forward, the shoulders round and the condition of "skewed back" is seen with flattening of the chest and cramping of the thorax.

If kept standing still for long periods of time the chest sinks, the abdomen protrudes, the chin drops forward and the weight is transferred from one leg to the other until the habit of resting on one becomes confirmed and a resultant lowering of one shoulder and distortion of the figure takes place. Not less profound though more difficult of measurement is the influence of this cramping on the heart, lungs and nervous system, and general health of pupils.

That a complete system of physical training can greatly improve this condition of school life will be generally admitted, and the constant strain of discipline caused by the attempt to keep children quiet and orderly should be greatly relieved by enough periodical exercise to engross that restless energy, which in the normal child is an index of his vitality.

The question is rather to outline a system of training suited to our conditions that would get the best results if generally applied in our public and high schools.

Such a system would be somewhat upon the following lines. At the end of every quarter of an hour's work at the desk, about 5 minutes should be devoted to free extension movements in the schoolroom with windows opened for ventilation when possible.

These movements should be designed to relieve the muscles and ligaments that have been on the strain and to correct the collapsed posture that results from the fatigue of sitting still.

Once a day there should be a change of clothing and at least half an hour's brisk exercise, hard enough to produce free perspiration, bringing into vigorous action the heart, lungs and skin, for no exercise has reached its maximum of good until this has been attained; this should

be followed by a tepid bath to cleanse the skin or even a cold bath if the child stands it well.

A large and well-ventilated hall should be used for this purpose, or in fine weather the open air.

In addition to this routine, out-door games should be encouraged in their season and made systematic for all who are able to take part in them. There will always be some whose physique or condition of health debars them from such rough games as football or hockey, but most of whom could take light exercise with great benefit. In other pupils special care is demanded requiring exercises that vary with the particular case, for the danger of overstrain and injury may be greatly increased by the kind of exercise employed.

For all such provision should be made that the pupil may graduate in better condition than when he entered instead of reversing the process.

At the very outset four questions must be settled before such a course can become part of the school system. They are time, teaching, equipment and medical supervision.

I. Where is the time ?

In all our schools and colleges there is a constant struggle for time to outflank the host of subjects that threaten to overwhelm both pupil and teacher alike, and the introduction of any new subject is not likely to be received with acclaim by teachers who look upon it as another demand on their already overtaxed energies.

II. How are teachers to be trained sufficiently in physical work to be able to give the exercises in the school room and how can we provide for a special teacher of gymnastics to conduct the regular work ?

III. How are we to provide a large well-ventilated room in which we could we sure of light and heat and the ordinary equipment of apparatus that goes with a modern well-regulated gymnasium, with dressing-rooms and lockers attached and with good hot and cold tub and shower baths, and if possible a swimming tank, for it is not to be forgotten that swimming is one of the best exercises we have for all-round development and is besides an accomplishment with which every person, male and female, should be familiar.

The ever present objection " Expense " comes up, but it is not fair in facing this question to say at once, because we cannot reach a certain standard of excellence forthwith, that therefore the standard is not worth striving for.

IV. What should be the proper extent and uses of medical supervision in the physical training of school children ?

There are always, in a class a certain number of pupils who are not up to the normal physically, and in allowing them to take part in severe exercise irreparable damage might be done which might impair their

usefulness or shorten their lives. Hence the necessity of having some medical supervision wherever exercise is used, that the instructor may know when certain pupils require to be treated with care or excused from any but the lightest forms of physical exercise.

The time occupied by exercise is so well employed that its introduction into the school curriculum should need no defense, and the hour in the gymnasium, preferably after the school work is over, should be the most attractive part of the day to the average boy or girl.

The training of the teachers would have to be done at the Normal schools, and a course could be taken there sufficient for the giving of such simple exercises as could be done in the school room. Of such exercises many manuals have been written, but I will refer only to the A. B. C. of Swedish Educational Gymnastics by Hartwig Nissen, instructor in physical training in the Boston Public Schools, and one of the most enthusiastic exponents of the Swedish system of school gymnastics; and to "School Gymnastics," by Jessie H. Bancroft, director of physical training in the public schools of Brooklyn.

The Swedish free movements depend for their individuality on two vital points, exercise by command and not with music, and the "Day's Order," by which the exercises are so grouped that a definite sequence is always followed.

The groups of movements are as follows :—

1. Order movements, to form the class ready to begin the real exercises and bring them to attention in correct position.
2. Leg movements, to exercise the legs and draw the blood from the brain.
3. Arch movements, to expand and raise the chest.
4. Arm movements, to elevate chest and strengthen the spine.
5. Balance movements, for equilibrium and posture.
6. Back movements, for shoulders and back.
7. Front movements, for abdominal walls.
8. Side movements, for muscles of waist and internal abdominal organs.
9. Jumping movements, for general development.
10. Slow leg movements, to prepare the body for rest.
11. Respiratory movements, to bring the respiration and circulation back to normal and prepare the body for rest.

By varying the number and severity of the exercises in each group, the character of the day's exercise may be much changed, while the day's order is retained. The advantages are many, a universal nomenclature and the training to ready obedience not being the least.

Its chief disadvantages are the uninteresting nature of many of the

movements which are analysed or dissected till the life has gone out of them. The strain on attention is not to be commended for over-worked children, and it is very doubtful if many of the exercises given have any of the results attributed to them.

Nearly all systems of school gymnastics, however, owe a great deal to the work done by the Swedes.

Miss Bancroft makes a selection of exercises from many sources, to which she adds others found to be good in her own experience. The result is a complete graded set of schoolroom exercises that are most complete and interesting.

For out-door or gymnasium work, however, the Swedish gymnastics are not so serviceable. Here dumb-bell, bar-bell and club drills to music are valuable and interesting; work on the parallel bars, horizontal and rings, gymnastic games and marches; and for girls fancy steps, marching and games. The importance of music can hardly be over-estimated. It relieves the strain of attention, the rhythm of a waltz or march makes the exercise almost automatic and has a distinctly soothing influence on the nerves, tired and irritable from the work of the day. To do the exercises in good time becomes a pleasure instead of a strain, and the music invigorates the gymnast almost as much as the exercise. It goes so far to make the work attractive that the increased enjoyment is enough to offset the trouble it may be to get it.

To direct this work we need more training than can be expected in the Normal school, and special teachers are required who have studied the higher branches of physical training in one of the Normal schools of gymnastics, such as the excellent ones at Harvard and Chautauqua, where all departments are taught both in theory and practice. One instructor could act for more than one school, and so divide the expense.

Military drill is sometimes employed in schools, but it seems to me totally unfit for the purposes of an all-round physical training. It was not designed for that purpose, and the constrained positions and long waits, a heavy rifle dragging on the muscles of the shoulder, are not likely to improve the figure of the growing lad. Individuality and freedom of movement have to be sacrificed to the good of the Company whose unit is four, and whose integrity depends on the self-effacement of its component parts.

The question of equipment must always be a serious one, but it need not be insurmountable. The main thing is a room large and well ventilated and well heated in winter. The apparatus can come little by little, but the space is essential. Open air gymnasiums would be of value and can now be easily fitted up by special apparatus made for the purpose. Why should not the drill halls that are found in almost every

town be used as gymnasiums for the school children ? They are unoccupied during the day as a rule, and could not be better employed.

The medical supervision should be such that a record could be kept of pupils throughout their course.

In the Montreal High School for boys the Rector has succeeded in introducing a partial system which has been in use for the last three years, and is now working very well. A medical examiner attends at certain hours and makes an examination of the heart, lungs and general muscular system of the boys, noting any physical peculiarity or defect. He then gives a certificate of fitness to take part in games or gymnastics, on which is marked the kind of work specially needed by the pupil. This is taken to the gymnasium director, who is thus enabled to apply the exercises that the boy most needs.

In many cases boys have been directed on the right track, who would have undoubtedly been injured by indiscriminate and undirected exercise; defects in development have been discovered that would have gone on to permanent deformity without timely advice and warning.

Among such conditions found have been palpitation, weak, irregular pulse, organic heart disease, headaches from eye defects, chronic cough and bronchitis, backache, scoliosis and flat foot, uneven shoulders, hernia and joint inflammations. In many cases the condition was unknown to the parents.

The certificate of the family physician is accepted, but as it is desired to keep a record of all such examinations, a special form is used, to be filed and kept in the High School building.

Some such system could be introduced into all schools with benefit to both teachers and pupils, but I would extend the duties of the medical supervisor to the inspection of the rooms to see that the desks and seats fit, and all other matters of school hygiene. He should be on hand for advice to teachers in cases where a pupil's dulness might depend on some defect of the senses, and the pupil referred to the family doctor for treatment.

REPORT OF A CASE OF COLLES' FRACTURE WHICH LED TO A SUIT FOR MALPRACTICE AND PROLONGED LITIGATION.

BY

J. M. CONERTY, M.D., of Smith's Falls.

After a delay of somewhat more than two years I desire to report the following case, not because of any new ideas in the line of treatment but rather on account of a complication which led to unsatisfactory results and further to show how a surgeon in the faithful performance of his work may be called on to defend himself in a most unjust action.

On the 11th of September, 1896, I was summoned to the home of Mr. A—, whose boy, a strumous lad of about ten years, had fallen from a beech-nut tree. On examination I found a fracture of the lower end of the radius (right arm) and a bruised condition of the thenar eminence corresponding to a point marking the junction of the middle with the inner third of the outer head of the flexor brevis pollicis muscle, also some scratches which had been bleeding on the dorsal surface of the hand.

After administering an anæsthetic I washed the hand and arm in a bichloride solution, 1 to 2000, and proceeded to reduce the fracture. The dressing used to retain the fragments in proper position was two splints, anterior and posterior, well padded, measuring about two and one-half inches in width and extending from near the elbow to the metacarpo-phalangeal articulation.

A pad consisting of a roll of bandage one inch in diameter wrapped in absorbent cotton was placed in the palm of the hand on which rested the distal end of the anterior splint and an antiseptic pledget of gauze was placed over the bruised area.

The splints were held in position (in the absence of adhesive plaster) by two "ties" of bandage placed one at the wrist and the other near the elbow. A bandage was then applied over the splints and the arm placed in a sling. Directions were given to keep the boy at rest and the hand elevated.

I saw the boy on September 12th and 17th, and found everything satisfactory. The boy did not complain. He was playing about two days after the accident. I did not see the boy again until October 4th, when I called at his home. On this date I removed the splints and found the dressings and hand in a very dirty condition. So far as the

bone was concerned, I found union good, with no deformity. After bathing the hand in tepid water I discovered an indurated patch of skin over the seat of bruise which was showing signs of separation from the healthy tissue. I considered it the remains of the bruised tissue which nature had not been able to take care of. It was superficial. Before going I dressed the hand antiseptically.

Three days after, on October 7th, I again called and on examining the hand, found signs of separation of this patch more marked. Again dressed it as on previous day, giving instructions to have the boy brought to my office the next day to have his hand dressed.

He did not come as directed and I afterwards concluded that his hand was all right. On Nov. 14th, Mrs. A—, who was about to be confined, called to consult me regarding her condition. On leaving my office she mentioned that the "sore" on the boy's hand had not healed yet. I reminded her of my instructions to bring the boy to my office to have his hand dressed and told her to have the boy brought to my office at once.

On Nov. 16th, Mrs. A-- brought the boy and on removing a dirty rag which served as a bandage, I found a deep sloughing sore the size of a twenty-five cent piece. The indurated patch of skin referred to before was still hanging to the surface of the sore by some fibrous shreds.

The wound had become infected with pus germs which had burrowed deeply. The thumb was held in an adducted and semi-flexed position in order to relieve any tension on the ulcerating surface.

On inquiring why the boy had not been brought to me as I had directed, Mrs. A— replied that she thought that the hand would heal all right. She tried everything on it to heal it. Spoke of some salve she had obtained from a neighbour woman, the healing properties of which were unsurpassed, and concluded by saying that "she didn't know what kind of a young one he was for if he got the slightest scratch it seemed never to heal."

On this occasion I got the sore cleaned up as well as possible, applied a proper dressing and instructed the boy to come to my office every day until his hand was all right. He came irregularly and it was almost the middle of December before the sore had completely healed.

As there was loss of integument and subadjacent tissue there was contraction in the process of healing which was much favored by the position in which the boy held his thumb—hence we had a slight deformity consisting of an adduction of the first metacarpal bone causing the thumb to be drawn toward the median line to such an exent that it interfered with the complete flexure of the index finger.

Owing to the youth of the patient and being deterred from doing a plastic operation owing to the unsanitary and septic conditions existing in the boy's home, I determined to try massage, promising good results if I had the co-operation of the boy and his parents. I encouraged the boy to come to my office every day for treatment and I explained to his parents how to rub and manipulate the boy's thumb in order to restore its position.

The boy came five times during the month of January. After this I did not see anything of him until the first of June when he appeared accompanied by his father, who for six month's previous had been threatening to bring an action against me for malpractice and boastfully claiming that he would get $5000.00 if he did so.

On this occasion I charged the father and son with neglect and pointed out to them where my directions had not been followed. I informed the father that I had not seen the boy for more than three months. The only excuse elicited from Mr. A— for his negligence in not executing my orders was that he thought the treatment I was giving the boy was not doing any good. He further stated that he had consulted other doctors who said that "the hand would have to be split up."

I discouraged any operative procedure at this time and told Mr. A— that I would not operate without giving massage a fair trial; that massage properly and persistently applied would in my opinion restore the functions of the thumb.

After again showing him how I wanted the hand treated, I requested Mr. A— to so treat it for ten minutes every night and to advise the boy's mother to do likewise every forenoon. The boy was also to come to my office every afternoon at five o'clock. He came only four or five times when I again lost all trace of him and have not had an opportunity to do anything for him since.

In answer to inquiries as to home treatment the boy told me that his mother had not had time to treat his hand and he was always in bed when his father came in at night, consequently there was no home treatment.

During this latter treatment I procured a plaster cast of another boy's hand, and after padding it carefully, would place the patient's hand in the cast with the thumb in an extended position. The hand was kept in the cast by a bandage, this I afterwards learned was taken off as soon as the boy would go home.

On the 5th day of January, 1898, I received a letter from Mr. A—'s solicitors asking for damages for alleged malpractice, and threatening that unless they heard from me, a writ would be issued within a week's time. The latter also stated that Mr. A— would consider any offer

of settlement. There was no offer of settlement, consequently, at the expiration of a week the promised writ was issued asking for $6000 damages.

The case came down for trial at the Spring Assizes in Perth, but owing to the inability of the plaintiffs to secure medical testimony, they asked for a postponement. We thought the case would end here, but during the summer the counsel for the plaintiffs succeeded in securing the services of other medical men to give evidence on their behalf.

Consequently at the Fall Assizes the case went to trial and after a fight lasting two days we succeeded in getting a non-suit with judgment for costs.

The plaintiffs at once appealed to the Divisional Court asking for a new trial on the grounds that "on the evidence the case should not have been taken from the jury."

After waiting almost a year the Divisional Court, I am sorry to say, gave judgment against me, ordering a new trial and saddling all the costs on me. Mr. B. B. Osler, my counsel, at once appealed from this judgment of the Divisional Court to the Court of Appeal, where the case now stands for argument. We expect a decision from this Court before the end of the year as the case is on the list for argument during the present session, and let us hope the decision may be favorable.

Notes—The contention of the plaintiffs is that the sore on the boy's arm was produced by a splint.

We know the cause as stated, the fall, causing devitalization of tissue and subsequently, infection, and further, we declare that owing to the location of the "sore" it is impossible to produce such by means of a splint.

The deformity which is slight, is due to cicatrical contraction rather than to any peculiar art in bandaging as alleged by the plaintiffs. There would never have been any contraction had there not been neglect on the part of the plaintiffs (from Oct. 7 to Nov. 16) allowing the sore to become deeply infected by pus organisms, with consequent loss of tissue.

The plaintiff is a worthless fellow who at the time he began the action was under an order of commitment to jail for debt. No matter therefore, under an order of commitment to jail for debt. No matter therefore, how successful we may be in defending, we must pay the costs of defence.

Just a word about settlement.—During the first days of the proceedings we offered (rather than spend money in litigation) to take the boy and place him in a hospital, public or private, and operate on his hand, or otherwise treat it in order to restore its usefulness, provided we could

have absolute control of him while under treatment. They would not accept this unless we gave them a guarantee. We of course, could not guarantee anything.

I presume at this time $200 would have settled the case but I considered that such a course would not only be unjust to the profession, but particularly so to myself.

While it would have been much better for me financially to have settled, yet in doing so, I would only be encouraging a class of unprincipled and irresponsible fellows who are after plunder rather than the benefit of our earnest efforts in their behalf.

It is true, and I have experienced the force of it, that when confronted by all the annoyance of protracted litigation, the enormous expense, which so many of us can ill afford, besides the injury to our professional standing, etc., the first suggestion which is apt to come, is to get the matter settled as quickly and consequently with as little publicity as possible. And we ask the question, would it not be better to pay something at once and get out of the difficulty ? My answer is no ! A thousand times no ! so long as we feel that we have done our duty and are therefore morally not responsible.

It is the duty and ought to be the desire of each member of the profession to suppress by every possible means all such actions, which are so fraught with injustice, not only to the individual, but also to the profession as a whole.

Just so soon as a certain class of the public and those who advocate their claims in court, understand that we do not listen to their "bluff." That they in order to gain anything must fight every inch of the ground against a united profession, then, and not till then, will the members of our profession be relieved largely if, not entirely, of a most painful annoyance, as well as to many of us a severe financial loss.

SOME RETINAL COMPLICATIONS IN CHLOROSIS.

BY

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The following cases of chlorosis are of interest because of the retinal condition. It is recognized that optic neuritis occasionally occurs in chlorotic girls. Sir William Gowers recorded two undoubted instances in the *British Medical Journal* of 1881 (Vol. i, 793). In each case the anæmia was very great, the hæmoglobin being reduced out of proportion to the corpuscles, in one to 30, and in the other to 38 per cent. The first case suffered from a relapse of neuritis on a recurrence of anæmia. In each case the improvement was most rapid under the influence of iron.

Another case of neuro-retinitis in a chlorotic girl is recorded by R. Williams in the *British Medical Journal* of 1884; (i., 10.) in which rapid recovery also took place under the administration of iron. It is interesting to note that these cases presented a slight degree of hypermetropia. "It is generally admitted that this condition is capable of causing slight congestion of the disc and, if so, it is possible that in these cases of chlorotic neuritis the hypermetropia may help in setting up the changes in the papilla which in the special blood state progresses to a much more intense degree than they would otherwise attain." (Gowers.)

Optic neuritis in chlorosis was first noticed by Hirschberg, and an instance in a girl of sixteen quickly cured by iron has been recorded by Bitsch in *Klin. Monatsblat* April, 1879, pp. 144. Saundby and Eales published a paper in the *Ophthalmic Review*, Vol. i, 303, on the changes found in the fundus oculi in anæmia, based on the examination of fifty cases. Arterial pulsation was not observed in any of the cases, and venous pulsation not more frequently than in healthy individuals. Slight blurring of the disc mostly with hypermetropia occurred in five of the cases (10 per cent.). In four of the cases there were whitish or yellowish patches of exudation near the disc or scattered at the periphery. In one case there were two hæmorrhages near the disc, and in several there were small white spots or small spots of pigment presumably left by hæmorrhages. Arterial pulsation was observed by Schmall in 20 out of 55 cases of chlorosis (*Ophthalmic Review*, 1888, pp. 268.)

Two of my cases presented optic neuritis with retinal hæmorrhages, the third, retinal hæmorrhages.

CASE I. Optic Neuritis with Retinal Hæmorrhages.

May H., 22 years, waitress, was admitted to the Montreal General Hospital on November 24, 1894, under Dr. J. J. Gardner, complaining of loss of vision in the left eye. The trouble began two weeks before her entrance to the hospital. She had come in from the cold and was sitting before the fire when pain, accompanied by profuse lachrymation, began in the outer part of the left eye. The pain was not constant but was present when she would turn the head quickly and absent if she remained quiet. It was sharp in character and was felt in the outer part of the eye and in both lids. When she would turn her head, the sight in the left eye would be absent for a moment and a mist would come over the eye. The pain continued for three days and the mist then became constant. The only cause to which she could attribute the trouble was exposure to a draught.

On admission to the hospital, her appearance was that of a well nourished girl of 22 years, of fair complexion and good colour. There was no pain in the eye. There was almost complete loss of sight in the eye. There was a well marked optic neuritis with numerous retinal hæmorrhages between the disc and the macula. The veins were engorged but no pulsation was noticed either in the veins or in the arteries. Careful inquiry and search were made for syphilis, but no evidence was obtained nor was there any history of specific disease. This is of interest as the neuritis was considered to be due to specific disease when the girl entered the hospital. I may say that Dr. Gardner and I felt quite sure of the absence of syphilis. Menstruation occurred every three weeks, lasted two days, and the flow was scanty and painful. Her eye trouble began one week prior to the menstrual period. The heart and lungs were normal, the hæmoglobin was 37 per cent., and as no cause other than the blood condition could be found to account for her trouble, she was placed upon Blaud's pills and mercurial inunctions. By December 31st, the disc had become much clearer and she could see down the ward with the affected eye. Examination by test letters gave $^{20}|_{30}$ without the aid of glasses and slight improvement with glasses. She left the hospital on January 5th, 1895, about six weeks after admission, feeling and looking exceedingly well. The hæmoglobin had increased to 70 per cent., the disc was white and the retinal hæmorrhages had disappeared. She could see well and read ordinary type.

CASE II. Optic Neuritis with Retinal Hœmorrhages.

Miss Fanny T., aged 17 years, school girl, consulted me on March 27, 1899, for headache and loss of sight in the right eye. The eye trouble began about six weeks before I saw her with sudden blindness

which was not attended by pain or lachrymation, and occurred while she was in school. Sight gradually returned, but three weeks later, while she was playing the piano and singing, sudden absolute loss of sight again occurred in the same eye.

When I first saw her, six weeks after the first loss of sight, the pupils were equal and of fair size and reacted well to light and accommodation. She could see only shadows with the right eye and there was marked diminution in the field of vision. There was a well marked neuro-retinitis with hæmorrhages. This condition was confirmed by Dr. J. J. Gardner, who found also a slight degree of hypermetropic astigmatism, axis 90°. The retina of the left eye was normal. The trouble to which the eye condition was due began one and a half years before with general weakness and headaches. When first seen by me, her appearance was that of a well nourished brunette of seventeen years. The mucous membranes were anæmic. She slept poorly and had frequent headaches situated in the temples and over the forehead. They were caused by excitement and reading. The heart and lungs were normal but she had dyspnœa and palpitation on even the slightest exertion. The sensations of heat and cold and pain were diminished over the entire right side. The deep reflexes were normal and the muscular power was similar on both sides. The only digestive disturbance was extreme constipation. The menses were irregular, scanty and painful. There was no leucorrhœa. There were no evidences and no history of syphilis. The hæmoglobin was 42 per cent., red cells 3,612,500, and there was well marked poikilocytosis. The urine was clear, acid, and was free from albumin and sugar. She was given Blaud's pills and potassium iodide, and by June 1st, that is, about nine weeks after I first saw her, the hæmoglobin had risen to 73 per cent., the red cells to 5,241,000, and there was no poikilocytosis. There were no signs of hæmorrhage and the disc, except for a little obscuring at the top, was almost clear. Her general health was excellent and she was free from headache, palpitation and dyspnœa. On June 13th, the hæmoglobin had risen to 90 per cent. She felt in perfect health. Her sight was good enough to read ordinary print, though not acute enough to distinguish people across the street. The disc was pale and at the upper margin a little obscure. There was still diminished sensation to pain and heat and cold over the entire right side. The Blaud's pills were discontinued and she took small doses of the potassium iodide for some time longer. On Dec. 15th, 1899, she felt in perfect health. The right disc was clear but rather pale. Vision, right eye, nearly $^{20}|_{40}$ without glasses and $^{20}|_{30}$ with glasses; left eye, $^{20}|_{30}$ without glasses, and $^{20}|_{20}$ with glasses.

CASE III. Retinal Hæmorrhage.

Mary Ann F., aged 22 years, was admitted to the Montreal General Hospital on January 22, 1894, under the care of Dr. J. J. Gardner, complaining of dimness of vision in the left eye and general weakness. Her trouble began two weeks previous to admission. She had been sweeping, and while stooping to pick up the dust pan, felt a sudden pain in the left eye. It was very sharp, lasted acutely about half an hour, and was accompanied by profuse lachrymation. She felt very faint. In about half an hour there was a smoke over the eye, and objects looked smoky. She could see from the corners of the eye but not directly in front. The pain was pricking in character, was worse at night, and lasted about two weeks. After that it was present only when she read or when a bright light was placed in front of her. Her sight gradually improved. The general symptoms which she complained of, such as weakness, breathlessness, palpitation, leucorrhœa, irregular and scanty menses, and headaches, had been developing for about two years. She had had measles in childhood, diphtheria at sixteen, and grippe two years previous to the eye trouble. There was no history of rheumatism.

On admission to the hospital, her condition was that of a well nourished young woman of 22 years with a fair complexion. The skin had a well marked green colour. The conjunctivæ and lips were very pale. the hands white and the nails bloodless. There was a hæmorrhage over the centre of the disc and another, about the size of the disc, situated at its upper and temporal side. The temperature was 98.8° F., and the pulse 88 in the afternoon. The heart impulse was slightly outside the nipple line. Dulness began at the upper border of the fourth rib and at the left margin of the sternum, and extended slightly outside the nipple line. A localized systolic murmur was heard at the apex and also a localised systolic murmur at the third left costal cartilage. She had slight cough without expectoration. There were palpitation and dyspnœa on exertion. The urine was 1020, acid, and did not contain albumin or sugar. The hæmoglobin was only 25 per cent. She was put to bed and given Blaud's pills and strychnine. On February 23rd, that is about four weeks after admission, she left the hospital. The hæmoglobin had increased to 60 per cent., the hæmorrhage over the disc had disappeared, and the hæmorrhage to the side of the disc had diminished one-half.

In conclusion there are a few points to which I wish to direct attention :—

(1) Only one eye was affected.

(2) In all three cases the onset was sudden.

(3) The rapid improvement under iron.

(4) The neuro-retinitis and hæmorrhages occurred well on in the course of the disease.

(5) Hypermetropia was present in both the cases with neuro-retinitis. I omitted to look for it in the other case.

(6) I take the liberty of quoting from Gower's Medical Ophthalmoscopy, pp. 101 and 102, to explain why iodide of potassium and mercury were given. "Optic neuritis is so frequently associated with syphilitic disease of the brain and its membranes that the administration of iodide of potassium should be a rule in all cases in which the age of the patient is such that acquired syphilis is possible. Iodide in large doses secures a more prompt improvement than mercury and does no harm if the disease is not syphlitic in nature. Additional benefit may, however, result from the subsequent use of mercury. The completeness of the recovery depends upon the promptness with which the progress of the disease can be checked. Even in syphilitic cases it must be remembered that the intra-ocular neuritis, being probably not syphilitic in nature although the consequence of syphilitic brain disease, the remedy employed does not influence the inflammatory products in the papilla as it does the disease in the brain."

Hughlings Jackson believes that iodide of potassium is sometimes useful when there is no syphilis.

SURGICAL GLEANINGS FROM ABROAD.*

BY

L. Coyteux Prevost, M.D., of Ottawa.

The surgeon's mission is to relieve the sufferings of those who confide their health to his care and to save their lives when he can. So noble is this mission that we willingly lend to it a sacerdotal character, because, after all, life is a blessing; it is better to be than not to be, and next to existence, health is the most desirable thing we, mortals, could wish for. We lose both, owing to systematic disorders, the true nature of which is all the more obscure that the phenomena take place in the interior of organs full of mystery, inaccessible to our best means of investigation. The explanation of the physiological functions of the body has always been the aim of predilection of those engaged in the study of medical sciences. The field is infinite. Whatever may be the depth that science has reached, and at the very moment where we are preparing to congratulate ourselves for having, as we think, at last, discovered the explanation most eagerly looked for, our hopes are suddenly crushed by the unforseen appearance of labyrinths strewed with new problems. And very often these recent discoveries shed a new light upon the route we have just travelled over, showing us with striking evidence the falsity of the ideas of the day, and compelling us to destroy what our poor human mind had erected at the expense of such great labor and the solidity of which we were so proud. We must commence all over again. Bitterly taught by experience, we go to work with less pride but more wisdom. Gathering from the acquisitions of the past, the few shreds of truth rescued from the disaster, as that could not perish, we religiously collect them, as primers of hope for the future. Wiser, we shall hereafter multiply our means in the research of the unknown, scrutinizing the validity of conclusions too hastily deducted from delusive theories. Above all, we shall ask, every one engaged in the study of medical science, to make known to us the results of their own resarches. The synthesis of all these intellectual endeavours shall, hereafter, constitute the base of all individual work, which is doomed to remain sterile if it is isolated. In a word, the knowledge of all that is done around us, joined to our personal experience, is the *sine qua non* condition of all serious progress in surgery as well as in medicine. But medical literature in spite of, or, perhaps, owing to its richness, is unable to supply us with such momentous knowledge; we must go ourselves and see hear and learn what is

said and done elsewhere. Unfortunately, exigencies of a large clientele and thousands of other obligations usually paralyse the liberty of the general practitioner. On the other hand, others, owing to the special nature of their occupations, enjoy more leisure. It belongs therefore to the latter to go and hunt up information and it is, besides, their duty to share the knowledge obtained with those who, in this respect, have not the same good fortune.

All this preamble, gentlemen, is merely and simply to tell you that I am here to-night, begging the favor of communicating to you some of the interesting facts I came across during the several excursions I have made amongst surgeons everywhere, but especially abroad.

The general impression I brought back from my trips, gentlemen, is the willingness with which nowadays the majority of surgeons resort to the knife in cases which were formerly relegated to the domain of timid temporisation or amenable to the general means of surgical therapeutics. The marvellous results obtained by the means of asepsis and antisepsis seem to justify the greatest daring. The peritoneal cavity has ceased to be the mysterious sanctuary which we always approached in trembling. We no longer wait until the stomach is the seat of a malignant affection to perform the resection of this viscus, and the success achieved by gastro-enterostomy in simple stricture of the pylorus has justified this courageous boldness. And Sclatter goes still further: he has removed the whole stomach itself, suturing afterwards the œsophagus to the duodenum. The patient lived, and what is more astonishing, the digestion was not only very little disturbed, but nitrogenous food itself did not seem to be aware of the fact that the organ entrusted with its metamorphosis existed no more. And, again, what would Durande say to-day, with his sovereign remedy for gall stone, could he witness with what facility we reach, knife in hand, the gall-bladder to cut open and extract the foreign body that it contains? The kidney, the spleen, nowadays, when they are in the way, we remove them, that is all. The intestine, we resect it by the yard as it were, the two ends are united, and the patient continues to live. And in gynæcology, what have we done within the last twenty years? And merely to determine the diagnosis, we do not hesitate to open the abdomen, an operation which, in spite of all that is said, we must still look upon as a defiance to the numerous and concealed enemies with which we are surrounded.

With regard to external surgical diseases, we do not inconvenience ourselves either. In anthrax, crucial incision had long ago taken the place of the classical poultice; to-day a great many surgeons, even at the onset of the disease, trace a parenthesis on each side of the evil and

remove it as they would do a simple tumor; and why not? Glands gorged with lymph in lymphadenitis, we scoop them out, it is more radical and more expeditious than to resort to hot fomentations or tincture of iodine. Inflamed joints which formerly we dared not approach but with the utmost respect, we tap them, incise them to-day, we cauterize their interior and the patients get well. In goitre, no more display of ointment or revulsive, we remove the gland. The enlarged prostate also is taken away after perhaps previous recourse to castration, while waiting to perform the radical operation.

Gentlemen, I have no intention of prolonging this enumeration, all I want to add is that lately, the majority of surgeons seem to have a tendency to repress the excess of this operative fever. Anyway, it is always the same thing, and history repeats itself. With the coming of the antiseptic era, there appeared an operative delirium which begins somewhat to fade away. The enthusiasm of the first days is abating, abuses are suppressed and the wisest show to us the path we must follow, narrowing, as it were, our means of action and focussing the operative indications taught by experience. I would not even be at all surprised that we would sooner or later fall into the opposite excess and that, fearing to do too much, we would remain behind the mark. This reflection comes to my mind in thinking of the passionate expression of the tendencies of those we agree to name the conservative surgeons. No doubt their aim is commendable, and moreover, we must confess that the results obtained in some cases seem to justify their ideas. But every one has not been so fortunate and very often, for instance, in presence of small uterine fibroid, has bitterly regretted having followed the advice of those who, in the name of conservation think it proper to abandon these cases to themselves. And again, for trying to be conservative, and for having neglected to remove the uterus in the course of double oöphorectomy, or else, for having simply resected an ovary instead of sacrificing it, I know of some who have experienced very keen remorse as a reward for their good intentions. But what I applaud above all with both hands, is the wise determination recently arrived at by a certain number of surgeons, and namely by Piquet and Febre, who caution us against attempting any surgical operation on hysterical or insane patients. Here, whatever may be the indication, as long as existence is not threatened, we must resist the temptation and abstain from all serious operative interference. And especially on the gynæcological ground, were I allowed to invoke my personal experience and to venture on advice, I would say: with those brave women, let the genitals alone, or else, if once you begin, you will never end. The whole genital system will be sacrificed piece-meal before you obtain the suppression of the painful symptoms.

Now, gentlemen, if you will kindly accompany me, let us pay together a short visit to New York, this incomparable metropolis, with its congregation of amiable and distinguished surgeons. Going, we shall stop a moment in Montreal, and shall visit Paris coming back. This itinerary is well worth another, is it not ?

There exists in Montreal a young institution which I desire to point out to your attention. It is a new medical association formed by a group of young French-Canadian physicians, the most of whom have terminated their studies in France, and who, since their return, have conscientiously continued to work and study. I know several of them personally, and all I can assure you is that some day you will hear of them. Every Thursday night they meet in one of the halls put at their disposal by the professors of Laval University, and there, under the chairmanship of a new president chosen from amongst themselves every week, they talk medicine, surgery, obstetrics, and bacteriology. Their meetings have especially a clinical character, the interesting cases met with in their practice being related, commented and thoroughly discussed. The reports of these remarkable evenings are published in *extenso* in periodical medical reviews, and really some of them are simply masterly. At one of their recent meetings, the everlasting subject of the operative indications in appendicitis was the order of the day. The meeting, that night, was presided over by one of their old professors and one of the most eminent surgeons in Montreal. Almost all members present, especially those who were doing some surgery, were in favor of an immediate operation in the great majority of cases, claiming that it was always unwise to let the patient run the risk of the contingent danger of temporisation. On the contrary, the president held an altogether different opinion, and squarely condemned appendicectomy as an operation almost in every case useless and very often harmful to the patient. The chief argument upon which rested his proposition was ever the same: He had seen and was still every day meeting with so many cases which had done well by medical therapeutic means alone, that it was causing the patient an unjustifiable risk, in opening the abdomen to remove the appendix.

Shall we ever agree upon this question so often and for such a long time debated ? yet, the whole thing seems to me very simple ; and if the adversaries are as deeply penetrated with the force of their arguments as I am of my own, I quite easily understand that we shall always follow parallel lines without any hope of ever coming together. Apart from a few rare exceptions, in which the urgency of operative treatment is generally admitted, almost all cases of appendicitis begin the same way and with the same symptoms, the cases which will favorably termi-

nate, and those which will end fatally. It is perfectly useless to rack our minds, we have no sure signs whatever, at the onset, by which we might surmise what the future keeps in store for us. "Let us wait," some might say, "it so frequently happens that everything passes off most naturally."

To my mind this is wrong. I am afraid to venture myself across a lake in a bark canoe; I had rather, in spite of rough roads, go around driving. "But, water is calm, the sky pure and bright, and besides," you might say, "I know lots of people who have crossed that way without accident."

I am quite aware of that, and it is not those who did it safely who have rendered me prudent, it is the others who were drowned, although the conditions were entirely similar and apparently as safe when they started. You cannot tell at what time of the crossing a gale may rise or a mere imprudence upset your frail boat. And, besides, since life itself is at stake, why not choose the safest route in spite of some inconvenience? For the country practitioner, away from large centres, it is another thing; let him run the risk. He has neither the practice, nor the modern arsenal required for this kind of operation, he is therefore justified in having recourse to the medical means at his disposal. But in a city, living in the vicinity of hospitals so well equipped and next door to trained surgeons, there should not be any hesitation; drive around the lake, do the operation or ask somebody else to do it for you, provided that the disease is at *the very onset*; and I insist upon that point. Such is, besides, the practice followed by the New York surgeons, who all believe that it is not prudent to leave a patient suffering from appendicitis, at the mercy of a mere medical treatment. They differ from one another only with regard to the variety of operative details which are as numerous as the surgeons themselves. I saw several of them at work and gathered information which is not devoid of interest. McBurney, for instance, whom I may call the father of operators for appendicitis, insists upon the necessity of making an oblique incision, in order to avoid the section of the nerves which traverse the abdomen and supply movement to the rectus muscle. Otherwise the patient will, later on, show a sort of muscular weakness on the operated side which, in the standing position, allows the abdomen to sag out on the right of the median line.

Morris, of the *Post-Graduate*, lays a great stress upon the necessity of making the smallest incision possible, one inch and a half, for example. I saw him make even only a simple button-hole, in cutting with scissors the base of a fold made by raising the skin, instead of dividing, like others, the integuments with a knife.

Lloyd also is much in favor of small incisions when operating for appendicitis. Why, may I ask you, resort to such exaggeration ?

I recollect having seen once an operator painfully labouring through one of these small openings. The operation had been long and difficult and it had proved necessary, in looking for the appendix, to pull out quite a good length of the large intestine. When it came to reinstate the bowel in the abdomen, the constriction produced by the incision had created exactly the conditions of strangulated hernia, and it was with the greatest trouble that the surgeon finally succeeded in reducing the gut, congested, bluish, enormously tumefied.

Gerster, of the Mount Sinai Hospital, on the contrary, makes an incision three or four inches long. He wants to see what he is doing, and he is right. He does not even feel the least uneasiness about the possibility or probability of future hernia, and I saw in his wards, three patients recently operated, who already during their convalescene had unmistakable hernia. "What difference does it make ?" said he ; "what I want, above all, is to save the life of my patients; the hernia we shall cure later on." I must add, however, that the cases I am alluding to were suppurative appendicitis which had required extensive drainage. In those cases with abscess, the majority of surgeons to-day are satisfied with evacuating the purulent collection, washing out the sac or wiping it out, filling it afterwards with large strips of iodoform gauze. They do not lose time in searching for the appendix unless the latter readily presents itself under the hand of the operator, in which case, of course, it is removed. If, compelled by circumstances, the removal of the appendix is decided, this is done only after the whole cavity has been surrounded with a real wall of iodoform gauze to protect entirely the peritoneal cavity from all contamination.

One of the most original things I saw in New York is the peculiar way that Professor Edebohls has adopted to do away with the appendix in some cases. He does not perform appendectomy, but invaginates the whole organ into the cæcum. After having looked for and found the appendix, he ligatures the meso down to the intestine and trims carefully the whole appendix from all adipose tissue which adheres to it. The assistant then grasps the cæcum between the index and the thumb of both hands on each side of the appendix. The operator, with a thumb forceps, carefully invaginates the appendix, beginning at the base and proceeding alternately on one side and then the other. Little by little, the appendix is coaxed in and finally disappears entirely. It can be felt, then, through the walls of the cæcum, but it is telescoped, as it were, serous against serous. By gradual pressure, he causes it to sink in more and more until it is entirely turned inside out like the finger of a glove, the inside of the appendix being in contact with the

intestinal mucous membrane. He finally sutures the opening left in the cæcum by the invaginated appendix. The latter, it seems, passes in the stools in eight or ten days. I need not add that this process is not applicable to perforated or gangrenous appendicitis.

I saw also Edebohls remove the appendix from behind in the course of nephrorrhaphy. You know that this distinguished surgeon believes with great conviction that salpyngitis, appendicitis, and floating kidney constitute a pathological triad which is almost always the indication for a triple surgical operation. To remove the appendix by the lumbar region is not an operation of daily occurrence. Edebohls has attempted it ten times already. Eight times he succeeded in finding the appendix and invaginated it according to the method I have just described, but twice he failed to find the appendix, which shows that it is quite a difficult operation to undertake.

Since I have the honor of speaking of Edebohls, I cannot resist the desire of giving you a description of his method of doing nephrorrhaphy, an operation which he has done alone, I believe, oftener than all the other surgeons in New York united.

The patient lies flat on her stomach, the legs flexed and the feet, heel upwards, held by the stirrups of the operating table you know. The abdomen rests on a cylindrical rubber air-cushion which Edebohls has devised especially for this kind of operation. It is about eighteen inches long and eight inches in diameter when inflated. An incision as long as possible is carried midway between the vertebral column and the lateral line of the body, from the border of the twelfth rib to the ilium. The external edge of the erector spinæ may be used as landmark. The knife progressing divides a few fibres of the latissimus dorsi, cuts a fascia and soon falls on the quadratus lumborum, which is denuded of its aponeurosis all along its internal border. The fatty capsule then is seen and the kidney may be felt already at the bottom of the wound. Between two forceps the adipose capsule is incised and the fat at once protrudes through the incision. The fibrous lamina is incised along the whole length of the convexity of the kidney, after which it is drawn out of the wound as far as it will go and the redundency of the fat sac is cut off on either side, taking care not to open the peritoneum at the lower pole of the kidney. The kidney is before our eyes. If it is very movable, it is hooked up with the fingers and brought entirely out of the abdomen. Should we experience any difficulty, then the ingenious action of the cushion is brought into play. In pulling downwards on the legs of the patient, the cushion quits the inferior part of the abdomen where it was placed at the beginning of the operation and rolls up towards the diaphragm, and by its

pressure crowds up the viscera and causes the kidney to almost pop out of the abdominal incision.

A small puncture is then made in the capsula propria on the convexity of the organ, in the median line near the lower pole. Through this opening, the capsula propria is divided downwards and upwards, upon the director. Catching the edge of the incised capsule with a thumb-forceps, the kidney is denuded with the handle of the scalpel on either side of the incision until about one inch of the kidney substance has been exposed all along the incision. The stripped off capsula propria is not removed, but is doubled backwards upon the still adherent portion like the lapel of a coat. At the time of the operation, there is sometimes quite free bleeding, but it is of little consequence. A small curved needle, threaded with fine catgut, is thrust, beginning by the external side, through the layers of the doubled capsula propria, passes across the substance of the kidney and comes out through the double layers of the capsule on the internal side. Three such sutures are used, one inch apart, one in the middle, one above and one below. The kidney is then allowed to fall back in the abdomen, this being done by rolling back the cushion to its former place. Then one end of the suture is armed with a needle which carries the thread through the substance of the quadratus lumborum and secured with a forceps. The same needle is threaded with the other end of the suture and thrust through the muscles on the external side and a forceps again applied. The same thing is done for the three sutures. The edges of the muscles are approximated over the kidney with a continuous suture and then only, the three former sutures are tied over the united muscles. But in tying these deep sutures, care must be exercised not to draw them too tightly, as they readily cut the friable kidney substance. The skin is united by a subcuticular suture and the dressing applied.

The patient is kept upon the back for three weeks and then allowed to sit up and go about as she pleases.

I showed you, gentlemen, at the last meeting of our society, with what disregard I treated the so much dreaded caustic and escharotic properties of pure carbolic acid, as long as I had near at hand some alcohol to neutralize its effects. It is to Dr. Phelps that I owe what I have learnt upon this subject.

You all know by reputation Dr. A. M. Phelps, who occupies such an eminent position amongst American surgeons. At a meeting of the Orthopedic Association held in New York last June, Dr. Phelps read a communication upon the treatment of erysipelas and purulent arthritis by pure carbolic acid. The importance of the facts related in his paper is such that I beg the permission to bring it to your knowledge.

He stated that Dr. Seneca Powell, of the New York Post-Graduate Medical School and Hospital, had discovered that alcohol was an absolute specific against the corroding effects of carbolic acid, and that he, Dr. Powell, had for years been treating abscesses by the method which Dr. Phelps now described and followed in the treatment of purulent and tuberculous joints. He reported a large number of cases of erysipelas treated at the City Hospital and presented the temperature charts of each case, which showed that immediately following the application of carbolic acid the temperature fell within six hours in many cases to normal, and in all of them the record showed a fall of temperature of from one to three degrees at each application, and the patients were all convalescent within four days.

Taking into consideration that the class of cases treated were of the severest type, sent to the hospital from other institutions of the city, and the results in cases treated by the orthodox methods, we must concede that this plan of treatment is a valuable one and an innovation which should be adopted by the entire profession. Since the introduction of this plan of treatment at the City Hospital, there had been no deaths from erysipelas so treated, and the doctor stated that erysipelas cases, following surgical operation, were now no longer transferred from the surgical ward to the erysipelas pavilion, but were immediately treated with carbolic acid and each case had been aborted.

The method of application is to apply to a well-cleansed surface of disease with a pledget of cotton and a pair of forceps, pure carbolic acid. When the skin begins to turn white and considerable smarting is present, alcohol is freely used to neutralize and wash away all of the acid. The parts then are simply covered with absorbent cotton and a bandage. Any extension of the redness is at once treated in a similar manner. No constitutional remedies were used in any of the cases.

In regard to joints, they are freely laid open and washed out with a weak solution of carbolic acid, two per cent. Towels saturated with alcohol are placed around the area of the operation and the entire joint swabbed out and injected with pure carbolic acid. After *two minutes* the joint is freely and carefully washed out with pure alcohol, and finally with a two per cent. solution of carbolic acid.

In smaller joints a half-inch drainage tube is employed, which is usually removed at the end of one week, depending entirely upon the condition of the joints. In hip joint excision a drainage tube from one inch to one inch and a half, and in the adult even larger, of glass or pure rubber, is inserted down the acetabulum. Subsequent applications of pure carbolic acid can be made through the large tubes to diseased areas until the granulation forces the tube out. He also reported a large number of cases of hip joint disease treated by this method which

had been discharged from the hospital within three weeks from the time of operation where perforation of pelvis had occurred and the head of the bone entirely destroyed. Such cases heretofore he had excised, and they had remained in the hospital from four months to a year.

The doctor is of the opinion that alcohol either neutralized the carbolic acid, or else acts mechanically, washing it away after the desired effect has been maintained. He also believes that strong acid unites with the albuminoids of the skin or tissues, forming new compounds, which are absorbed through the lymphatics destroying germ life.

His reason for believing the last statement, is that pure carbolic acid cannot be absorbed, but after application of pure carbolic in erysipelas and in septic and tubercular processes, the lymphatics begin immediately to be painless, the tissues in the area of disease to shrink and the pathogenic process immediately subsides. This must be due to a new compound which is formed by the application of pure carbolic acid.

I wish I could also, gentlemen, show you with what assurance and what brilliancy Dr. Phelps straightens, with the osteoclast, those bow-legged children whom we used to treat so willingly, formerly, by osteotomy; but it would be necessary to exhibit, at the same time, the instrument he uses. I shall do it later on when I have the instrument at my disposal.

(*To be continued*)

Case Reports.

A CASE OF HÆMATOMETRA.

BY

WILLIAM GARDNER, M.D.

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Accumulations of blood, pus, or other fluids in the uterus cannot be said to be of extreme rarity. Kelly proposes to consider the condition as that of the uterus as a retention cyst. There is certainly a considerable show of reason for this. The accumulations in question can of course exist only when secretion continues and the openings leading to and from the uterus are occluded. The commonest cases are without doubt those in which cancerous disease has occluded the cervix. When the pain of uterine cancer is exceptionally severe and the uterine body enlarged, this condition—easily relievable so far as an important element in the cause of pain is concerned—should be suspected.

The case now to be related presents certain features of interest, especially perhaps from the point of view of the cause and diagnosis. The patient, æt. 51, was referred to me by Dr. Mowat, of Williamstown, Ont., for operation for an abdominal tumour. She had been married 18 years, and had had two full term births and one miscarriage; the last child was born 11 years ago; menstruation had been absent two years. She had suffered from falling of the womb for several years, and for this she had worn a cup and stem pessary with abdominal belt supporter.

When I saw her, the complaints were of abdominal enlargement and occasional pain; of the pain she had, however, not much to say. I first saw her on the 14th of September last. She had had the most pain during last winter and spring, whereas the abdominal enlargement had first attracted her notice in June.

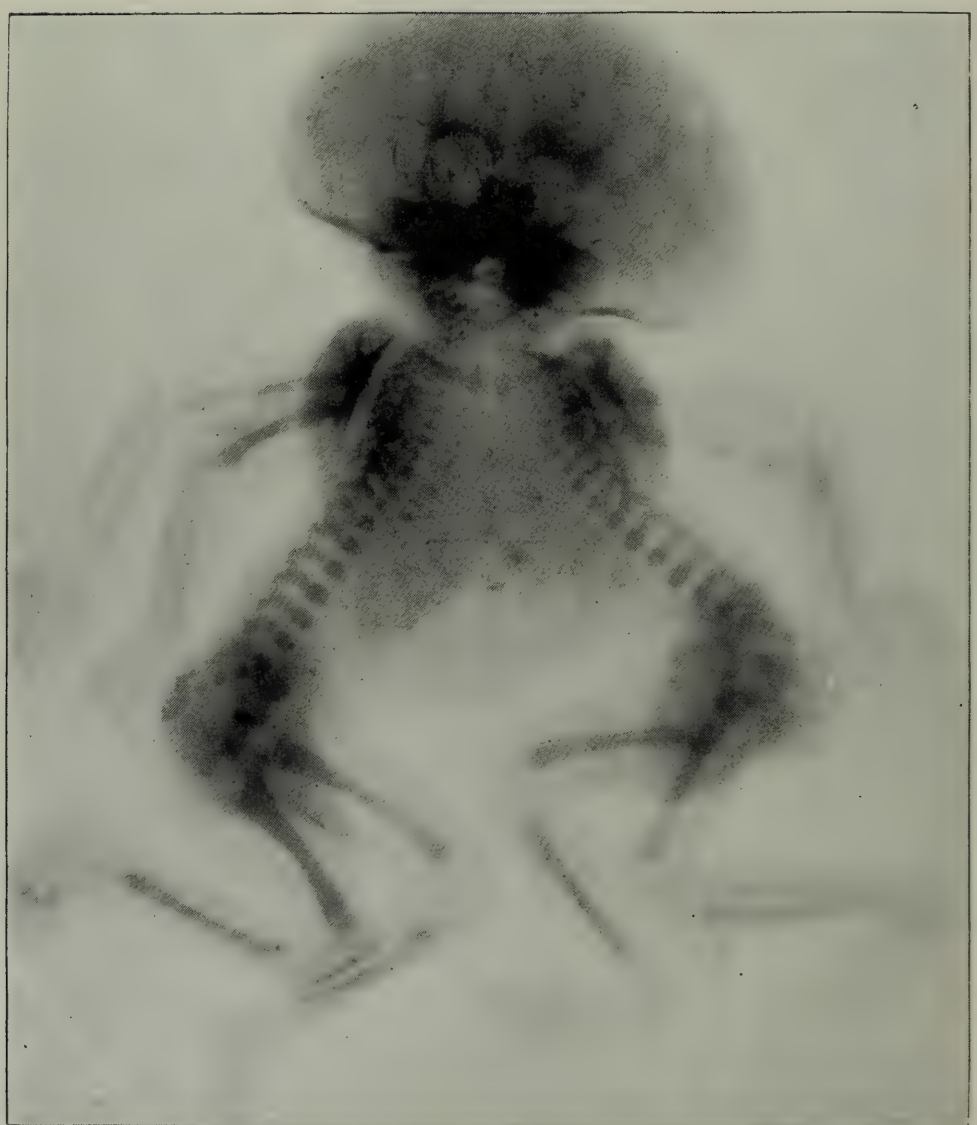
The patient was tall, spare, sallow and dark complexioned. The abdominal wall was very thin and the hypogastrium distended by a very firm, round, smooth, almost immovable, insensitive tumour; the vaginal outlet was torn partly through the sphincter, the canal much relaxed and the walls protruding. The cervix was raised to the level of the upper margin of the pubes against which it was pressed. A moderate degree of mobility existed between the cervix and the tumour. The uterus could not be defined.

The diagnosis was obscure, the physical characters of the tumour were

consistent with either uterine myoma or the much rarer solid tumour of the ovary. But the growth at so rapid a rate as described, especially after menopause, opposed the theory of uterine myoma unless it were undergoing the rare degeneration into malignancy. If the theory of ovarian tumour were entertained, the rapid growth of a solid tumour could only be consistent with malignancy.

The operation revealed a very different condition to either. The tumour, which proved to be the uterus, though not adherent, was impacted in the pelvic cavity, from which it was extracted with considerable difficulty. When raised it presented a marked depression on its posterior surface, corresponding to the promontory of the sacrum. Supra vaginal amputation was done in the usual manner. I desired to leave the cervix for the sake of the integrity of the pelvic floor, if at all feasible. This, however, would not have been justifiable had the tumour been malignant. To help a decision of this question, before completing the operation, I cut into the tumour and found the walls from a half to three-quarters of an inch thick symmetrical throughout; when I reached the cavity black fluid blood spouted upwards to a distance of two feet. On laying freely open the uterine cavity, a quantity of black and partly decolorised blood clot was revealed, the quantity of fluid and clotted blood must have been over a pint, as the whole size of the entire tumour equalled an adult head. When empty the uniform smoothness of lining membrane and elastic consistency of wall seemed to exclude malignancy and the cervix was therefore allowed to remain and the operation finished in the usual way.

The recovery was ideal and complete. Microscopical examination excluded all malignant characters. The most probable explanation of the occlusion of the cervix which led to the accumulation of menstrual blood seemed to be adhesive inflammation, in the causation of which, the prolonged pressure of the cup of the prolapsus pessary, had probably most to do.



A RARE FORM OF PYOSALPINX COMPLICATING UTERINE MYOMA.

BY

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AND

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The patient, æt. 44, had been married 13 years and a widow for nine months; never pregnant. Menstruation first appeared at the age of 14, and until marriage was scanty and painful, but during the whole of her married life profuse. In recent years there had been irregular hæmorrhages. She noticed abdominal enlargement soon after marriage. Increase had been slow; there had been for years tolerably constant pelvic pain and reflex neuralgia of the head and neck.

Examination revealed a tolerably fat abdominal wall, distended by a globular, smooth, insensitive, slightly movable tumour of the size of a two-year old child's head. The vaginal orifice and whole canal were so narrowed as barely to admit the index finger; its walls were rough, apparently cicatricial, tender, and bleeding slightly from touch of the examining finger. The uterine tumour was an ordinary interstitial myoma.

The main interest of the case consists in the condition of the Fallopian tubes, as illustrated by the accompanying photographs, showing the oval-shaped expansion without any adhesion to surrounding organs or structures. The patient made a good recovery.

Of the numerous cases of diseased Fallopian tubes which have come under my notice, I remember but one of pyosalpinx without adhesions. In this case both tubes were distended with pus, and the condition was pronounced by Dr. Wyatt Johnston to be tuberculous. The association of pyosalpinx with uterine myoma is at all times rare. Statistics from the experience of Dr. A. Martin are given by Dr. Maude Abbott in the detailed description of the specimen appended.

Specimen consisting of intramural uterine myoma with double pysalpynx.

The tumour is situated in the anterior wall of the uterus and separated from its cavity by a thin layer of muscular tissue. The uterus is much enlarged, its cavity measuring 10 cc. in depth and the posterior wall

23.5 mm. in thickness. Weight of tumour with uterus is 1230 grammes; microscopically it is a simple myoma.

The interest of the case lies in the condition of the Fallopian tubes. They are much thickened in the first part of their course and are dilated at their outer extremity into large oval tumours from the distal end of which the fimbriæ float free. On section, these tumours are seen to consist of a single thin walled cavity filled with thick greyish yellow pasty material—apparently inspissated pus—microscopically masses of granular debris, fat granules and globules, fatty and cholesterin crystals. On the right side, the tumour is much larger than on the left, and the undilated tube is thicker and shorter. The serous surfaces of both tubes are everywhere free from adhesions.

Sections from the cyst wall, from the uterine end of the tube, and from that part of it near the tumour were examined microscopically.

The wall of the cavity is thin and leathery and has a smooth inner surface. Microscopically it consists of a thin layer of muscular tissue lined by a laminated, almost homogenous matter, probably derived from the cyst contents. The mucosa and submucosa have entirely disappeared.

The uterine extremity of the tube shows catarrhal inflammation. The epithelium was almost entirely eroded and the submucosa infiltrated with small cells. Patches of small celled infiltration are scattered through the muscular coat. No giant cells or distinct evidence of tuberculosis were seen. The muscular coat was greatly hypertrophied, chiefly on the upper side of the tube, in a peculiarly centric manner, so that the lumen lies about one-fourth of the diameter above the lower surface. On staining for bacteria, none were seen, but the peculiar round bodies known as blastomycetes were apparent, staining with carbol-fuchsin. Near the mucosa the signs of inflammation were very slight; the lumen was much smaller than the uterine end, though still patent.

Interesting points in this specimen are :—

(1) The existence of pyosalpynx without any signs of infllammation of the surrounding parts, as shown by absence of adhesions, and the absence of any retraction of the fimbriæ, common in inflammatory conditions of the tube.

(2) The combination of pyosalpynx with myoma. This is rare. Martin, of Berlin, in an analysis of 287 cases of tubal disease operated on by him found it three times.

(3) A minor point is the curious excentric hypertrophy of the tube. This is said to be a fairly common consequence of tubal stenosis beyond the point of hypertrophy.

A CASE OF JANICEPS.*

BY

ANDREW MACPHAIL, M.D.,

Professor of Pathology and Bacteriology, University of Bishops College.

This specimen of janiceps or double-faced monster known as syncephalus or prosopo-thoracophagus was sent to me from Jamaica, of which place the parents are natives. The foregoing mixture of terms refers to a malformation in which the spinal columns and backs of the crania are separate, with the thoraces and faces coalescing anteriorly. In this case, as sometimes occurs, the faces are rotated at right angles with the antero-posterior plane of the spinal column, the one looking right, the other looking left, and each half of the face belonging to each body.

The face looking to the right of the larger segment of the body is fully developed and the expression not displeasing. The ears are complete, the eyeballs covered with pupillary membrane, the anterior nares perfect, the tongue slightly protruded, and the lips uncleft.

The face looking to the left is sadly deficient in development and arrangement. The eyeballs are merged together in a gaping triangular space, the nose is represented by two fleshy elevations, the mouth is deeply placed between the ears and these organs are united by the lobules.

The anterior fontanelles are properly placed in reference to the main mass of the heads. Both bodies have female genitals well developed. The four arms and four legs are well grown and the nails well formed.

The following measurements were made by Dr. Herbert :—Segment A—length, 13 inches; iliac crest to os calcis, $6\frac{3}{4}$ inches; acromion process to end of middle finger, 6 inches. Segment B—length, $11\frac{1}{2}$ inches; iliac crest to os calcis, $6\frac{1}{2}$ inches; acromion process to end of middle finger, 6 inches. Circumference of head, $12\frac{3}{4}$ inches; occiput to occiput, $4\frac{1}{2}$ inches; brow to brow, $2\frac{3}{4}$ inches.

The accompanying photograph and skiagraph will aid in the description. The skiagraph was made by Dr. Robert Wilson.

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* Read before the Montreal Medico-Chirurgical Society, May 1, 1899.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

The Treatment of Insanity by Thyroid.

James Middlemass, M.D., (Superintendent of Sunderland Asylum). *Journal of Mental Science*, January, 1899.

During the past five years a very considerable experience has been recorded of the utility or otherwise of thyroid powder in various forms of mental disturbance. A valuable paper dealing with this subject was contributed to our columns by Dr. Burgess of the Verdun Asylum.

Dr. Middlemass gives a *resumé* of the employment of thyroid in 39 cases of insanity, chiefly cases of melancholia, in some form or other. He tabulates the results as follows :—

		Recovered.	Great Improvement.	Slight Improvement.	No change.
Males	8	1	0	2	5
Females	31	5	16	9	1
	39	6	16	11	6

It will be seen that in the great majority of cases a considerable change was manifest in the patient's mental state. All of those who recovered except one were suffering from melancholia. A striking feature of Middlemass' experience was the large doses that he was able to give without inducing any untoward effects. He finds that the full beneficial effects as a rule are to be obtained by giving doses of sixty grains a day for six days, though in some less is sufficient, and in others ninety grains can be tolerated without ill effects. These are quantities that it would be unsafe or even impossible to give without producing very distressing or even dangerous effects in healthy persons or in those suffering from any functional disease of the nervous system.

In every case in the above series more or less physical reaction was manifest from the thyroid powder, although its degree varied much in different individuals. In nearly every case a rise of temperature of

from 2° to 3° F. was noticed. In a few cases the temperature reached to 4° above the normal, and in only one or two cases was the rise very slight. The rate of the pulse was constantly increased while its strength and volume were both diminished. It is important to remember that the pulse continues to be accelerated during the whole period that the patient is taking thyroid, while the temperature after the first week is no longer influenced by the thyroid. The state of the pulse then, is the principal indication for the continuance or otherwise of the agent.

Not infrequently thyroid causes digestive disturbance, an accident which is to be if possible avoided, as it greatly interferes with the rapidity and permanence of the cure, especially in cases of melancholia. Dr. Middlemass recommends warm soup, beef tea or bovril, as the best vehicle for the administration of the thyroid and as helping to prevent gastric disturbance. In cases of insanity attended by marked and progressive loss of flesh, he considers it undesirable to give the thyroid in large doses. He considers doses of 15 grains per day as sufficient. The substance has a very marked effect on nutrition and in cases of progressive emaciation every influence for good may be more than counterbalanced by its tending to increase the loss of flesh and strength. Dr. Middlemass lays particular stress on the danger of giving thyroid to patients who have tuberculosis. It is well known that it acts in these cases not unlike Koch's original tuberculin. Thyroid should be used with caution in patients the subject of organic heart disease.

In regard to the mental effects induced in Dr. Middlemass' cases, it was observed that in every case some such effect was brought about, though the degree of the change varied much in different cases. In the majority of the cases there was a tendency towards the reproduction of the original mental symptoms. If, for instance, "suicidal feelings had been present at the outset of the attack, they were frequently manifested once more during a course of thyroid. Such a fact obviously indicates the necessity for attention to mental symptoms during the treatment."

A difference of opinion exists as to the probable mode of action of thyroid in insanity, some contending that its influence on the temperature, pulse, and general metabolism is the chief, if not the only, way in which it acts, comparing its results to similar ones noticed after a severe acute illness. Others maintain that it has some special influence on nervous metabolism.

James Stewart.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Resection of Epididymis and Orchidotomy,

MEYER. "Resection of Epididymis and Orchidotomy." *Annals of Surgery, Nov., 1899.*

Dr. Meyer, of New York, at a recent meeting of the Surgical Society of that city, advocated the removal of the epididymis only, leaving the testicle in the scrotum, in certain cases of tuberculous disease in the scrotum. He shells out the epididymis and its attached vas deferens and removes them, inasmuch as the disease will in all likelihood be limited to these structures at the outset. He next does an orchidotomy, opening the testicles just as one would do with a kidney, and having satisfied himself that it is not diseased, he sews up the opening and leaves the gland. He would only advocate this in cases where a testicle had been previously removed for some diseased condition or was congenitally absent. His reason for leaving this isolated gland is that it may prevent the mental symptoms which may follow the removal of both testicles.

Most of the speakers who discussed the case, I am glad to say, were sufficiently sensible to disagree with Dr. Meyer. In the first place, has Dr. Meyer any proof that leaving an isolated testicle will prevent the much dreaded mental symptoms of the completely castrated man ? Most of us know many cases where both testicles have been excised for disease and the patient remained afterwards as mentally active as before the operation. Conservative surgery is always to be commended, but the conservative surgery which will cut away a tuberculous epididymis from a testicle and leave a useless and probably a diseased gland has nothing to commend it. There can be little question that in all cases where a diagnosis is made of tuberculosis of the testicle, beginning of course in the epididymis as it usually does, castration is the operation to be advised. By the way, some one has lately been recommending that castration should be performed by a small opening beginning at the side of the external ring and running down over the spermatic cord as far as the top only of the scrotum. By traction on the cord the testicle and tunica vaginalis could be delivered through this opening and tied off in the usual way. We all know how difficult it is to sterilize the skin of the scrotum, and also how the action of the dartos prevents a

good suture line. It may well be that this simple plan will obviate both of these difficulties.

The Diagnosis and Treatment of Gunshot Wounds of the Abdomen.

"The Diagnosis and Treatment of Gunshot Wounds of the Abdomen." *British Medical Journal, March 21, 1899.*

A discussion on this subject took place in the Surgical Section of the British Medical Association at Portsmouth last summer. The general consensus of opinion of those who spoke was that it was always advisable in any perforating wound of the abdomen to do an exploratory laparotomy and to do it at once. One is almost certain to find a lesion of some viscus, and that being the case, why wait until one has symptoms—in other words, peritonitis—before opening the belly? In nine cases out of ten it will be too late to benefit the patient. If you find nothing wrong at the exploratory operation so much the better, and you have really done the patient no harm provided modern antiseptic methods have been adhered to. Even in military surgery, where asepsis is not always possible, it is better to take the risk and prevent the further exudation of fæces into the peritoneal cavity or further hæmorrhage, and even at the worst to provide drainage. It is wonderful what an amount of dirt the peritoneum will reject through a good drain.

The use of Murphy's button, as tending to lessen the time necessary for the repair of wounded intestine in these cases, was highly recommended by many of the speakers, but most of them, I notice, spoke of it on theoretical grounds. One very interesting side light on the discussion was as to the use of the X-rays in determining the position of the bullet. Dr. Blacker, the superintendent of the X-ray department of St. Thomas' Hospital, London, said that his experience covering 66 cases led to the conclusion that it was most difficult to get a good skiagraph or a satisfactory fluoscopic examination of these cases, owing to the fact that the abdominal contents, as well as the bullet, were kept moving up and down by the respiratory movements of the diaphragm. He had tried a very ingenious method of having the exposure at one phase only of each respiratory act, but it had only been partially successful.

The Treatment of Surgical Shock.

Moynihan. "On the Prevention or Anticipation of Shock in Surgical Operations." *British Medical Journal, Nov. 25, 1899.*

Hall, J. Basil. "The Treatment of Surgical Shock by Large Doses of Strychnine." *Ibid.*

The first paper by Mr. B. G. A. Moynihan, Assistant Surgeon, Leeds General Infirmary, discusses the best means of preventing shock in surgi-

cal operations. He would employ all measures calculated to conserve the body heat; have the temperature of the operating room 70° F.; place the patient on a warm operating table, preferably one that can be kept warm by a current of hot water; and then swathe the parts not to be operated on in cotton wool with flannel bandages. Before giving the anæsthetic he advises a hypodermic of strychnine, and here he thinks the usual mistake is that too small a dose is given. He gives ten minums of liquor strychninæ at first, followed as needed by five minum doses during the operation. He also gives subcutaneously as the operation progresses, one to four pints of normal, warm, saline solution. By careful attention to these details, he claims, we may prevent shock in most cases of severe operations unattended of course by serious hæmorrhage.

In the second paper, Dr. J. Basil Hall, Surgeon to the Bradford Union Infirmary, also makes a strong plea for the use of large doses of strychnine in sudden shock during prolonged surgical operations. He gives liquor strychninæ in doses of ten to twenty-five minums (N.B. 25 minums equals $\frac{1}{4}$ grain of strychnine), and has never had any poisonous after effects. It may be true, as he says, that in conditions of shock proportionately large doses of stimulant are borne without producing the usual effects. He says: "It seems certain that the human body when suffering from profound shock will endure very large doses of strychnine, not only without ill effect but actually with benefit, and I feel convinced that when given boldly it is a most powerful remedy . . . . where strychnine is indicated at all, I believe it is futile to give less than $^{1}|_{10}$ grain."

This seems to us a very large dose of strychnine, the mininum being three times as large as our surgeons are in the habit of employing, and this may be one reason for the statement we not infrequently hear in our operating rooms, "that strychnine is not a very reliable remedy in shock." Personally, I have always seen much more rapid and satisfactory results from camphor (one grain dissolved in ten minums of olive oil) given hypodermically in doses of one grain. It is very rapidly diffusible and may therefore be repeated in a few minutes. As regards prevention of shock, we are quite at one with Dr. Moynihan in his advocacy of the conservation of the body heat and the free use of saline transfusion as a routine procedure; and we would also advocate the completion of all operations as soon as possible. It is just possible, that in these days of large surgical clinics, too much time is spent by the operator in showing to the class the different steps of the operation and the different structures exposed.

A Plea for the Further Use of Carbolic Acid.

ADAMS, F. J. "A Plea for the Further Use of Carbolic Acid." *New York Medical Journal, November 25, 1899.*

The author of this article points out that carbolic acid has held its own as a germicide amongst a host of later rivals. It occurs to him that it might with advantage be used pure in certain infectious conditions now that we know of a quick and reliable antidote (pure alcohol) to its chemical action on the tissues to which it is applied. "My method," he says, "has been for the past eight months to use the crystals, liquefying them and applying the fluid to the surface with a camel's hair brush. As soon as the surface appears white, I apply alcohol (chemically pure) in copious quantities and the work is over. I have been using this treatment in all cases of cellulitis, felons, about ulcers with wide spread exudate, carbuncles, erysipelas, and, in short, any and all inflammatory conditions where streptococci and staphylococci are present." Dr. Adams then proceeds to give the clinical histories of some cases treated by this method, and the results due to the treatment in every case are certainly highly gratifying.

For instance, take this one :—Mary S., aged 50 years, cellulitis of the arm, right hand and forearm, lymphatic channels red and swollen, axillary glands greatly enlarged. Pure carbolic acid painted over entire hand, forearm and lymphatic channels. Bathed thoroughly with alcohol. Reported next day, cured."

One would like to know in such a case as the above a few more facts about the condition. What was the source and character of the infection ? What constitutional symptoms were present ? Dr. Adams does not say anything about pain following the application of the acid, but our own experience of it, accidentally, proves that burns from carbolic acid are not very painful and its general action on open wounds is that of an analgesic. It occurs to me that it might be a good substitute for acid nitrate of mercury as an application to chancroidal ulcers, neutralizing with alcohol as suggested in this paper. It has also lately been recommended subcutaneously in many localised suppurative conditions, e. g., furuncles, carbuncles, suppurative amygdalitis, etc. The use of pure alcohol as an antidote in suicidal drinking of carbolic acid should not be lost sight of, and the author of this paper gives a very instructive case of this kind.

J. M. Elder.

Ophthalmology.

UNDER THE CHARGE OF FRANK BULLER,

Traumatic Pulsating Exophthalmos.

ARNOLD LAWSON. "Traumatic Pulsating Exophthalmos." *Ophthalmic Hospital Reports, May, 1899.*

This interesting case report by Lawson is that of a woman who developed pulsating exophthalmos of the right eye following a blow on the back of the head. At first rest in bed and adminisration of potassium iodide was the line of treatment followed, but at the end of a fortnight, as no improvement had resulted, the right common carotid was tied opposite the cricoid cartilage. The change for the better was immediate and marked, and after the patient had been kept absolutely quiet for four weeks she was discharged. It would appear that her demission was a little premature, since the patient very shortly after reappeared complaining of the return of all her symptoms, and in addition, copious nasal hæmorrhages. Further absolute rest in the recumbent position gradually effected a permanent cure.

The point Lawson emphasizes is the necessity of prolonged rest after the ligation.

Resection of the Cervical mpathetic in Glaucoma.

JONNESCO. "Resection of the Cervical Sympathetic in Glaucoma." *Wiener Klin. Wochenschr., May 4, 1899.*

ZIMMERMANN. *Die Ophthalmologische Klinik, Aug. 5, 1899.*

In 1897, Jonnesco for the first time resected the superior ganglion of the cervical sympathetic nerve in a case of glaucoma with marked success, and he now reports eight more cases. Removal of the ganglion destroys the function of the vasoconstrictor fibres so there follows dilatation of the arteries, decrease in blood pressure, and diminished extravasation. The excitosecretory fibres are likewise paralysed, and accordingly, there is a corresponding decrease of the aqueous humour. The iris dilator fibres are affected, so marked contraction of the pupil follows with a resulting opening of the filtration canals in the iris angle. The nerves to the nonstriped peribulbar muscles also loose their functional activity, and the said muscles no longer exert any constricting force on the emissory veins, so that a normal return circulation is established.

After the operation there is a transient congestion of the eye and of the same side of the face, and an increased flow of tears, saliva and nasal secretion. As permanent results of the operation, in addition to the cure of the glaucoma, are a narrowing and paresis of the pupil, and slight ptosis and sinking of the eye-ball in the orbit.

No evil after effects have been observed in any of the cases in which this operation has been performed, and in all except three, the glaucomatous condition has been greatly benefitted where it was not absolutely cured. The most marked results were obtained in chronic irritative glaucomata with prodomata, and in chronic simple glaucoma; the partial success or non-success in the other forms is attributed to the presence of the inflammatory condition which resection of the sympathetic cannot influence. It is in these chronic forms that iridectomy is of little or no avail.

Zimmermann reports a very typical case where excision of the superior cervical ganglion was followed by very rapid improvement.

Orbital Phlegmon.

Dagilaiski. "Orbital Phlegmon of Dental Origin." *Klin. Monatsblätter, July, 1899.*

Lzulislawski. "Cerebral Abscess due to Orbital Phlegmon." *Ibid, Aug., 1899.*

Dagilaiski's case was a boy seven years old who had an alveolar abscess at the root of a carious, first, upper molar. The left side of the face was greatly swollen as far up as the temporal region and especially painful over the anterior surface of the antrum and lower surface of the orbit. The eyelids were tense, swollen, and tightly closed, the conjunctiva chemosed, the eyeball proptosed and very restricted in its upward and downward movements, although the movements laterally were free.

The tooth was extracted and the antrum thoroughly irrigated, much pus being evacuated. Recovery rapidly followed. The inflammatory process had made its way along the periosteum of the upper jaw.

Szulislawski mentions the various ways in which an orbital phlegmon may extend to the brain as follows: direct, through the superior orbital fissure ; or by inflammatory thromboses of the superior or inferior ophthalmic vein and a resulting sinus thrombosis ; or by way of the periosteum. Some cases occur in which none of the foregoing lines are followed and in which the resulting intracranial lesion must be due to metastasis.

The writer mentions a case of traumatic orbital phlegmon in which shortly after the healing of the orbital lesion cerebral symptoms devel-

oped, followed rapidly by death. The *post mortem* examination revealed an abscess of the frontal lobe of the same side as big as a fist. Here the lesion was of metastatic origin. The general cerebral symptoms pointed to abscess formation, as no symptoms of meningitis were marked. The presence of general cerebral symptoms without any focal manifestations strongly suggested the frontal lobe as being the site of the lesion.

Conjunctivitis Due to Penetration of Hairs of Plants.

Markiss. "Conjunctivitis due to Penetration of Hairs of Plants." *Zeitschrift f. Augenheilkunde, July, 1899.*

Markiss' case strongly suggests the similar condition due to lodgment of the hairs of the caterpillar in the eye, which Lawford described a few years ago. Markiss' case was a man who was in the habit of carrying "Juckpulver," which consists mainly of the hairs of a certain plant. The conjunctiva was red and covered with small nodules like trachoma. On rubbing the finger over these nodules they produced the sensation of a brush. The nodules were found to contain the minute hairs of the plant. The hairs were extracted, the nodules excised and cold applications used, resulting in cure.

Results of Eye Strain.

Drew. "Reflex Irritation, especially Eye Strain, a Factor in Nervous and Mental Disease." *Med. Record, Sept. 9, 1899.*

Capps. "Epilepic Eye Strain." *New York Med. Jour., Sept. 16, 1899.*

Neuschular. "Odontalgia depending upon Insufficiency of the Internal Recti Muscles." *Recueil d'Ophthalmologie, Aug., 1899.*

Drew in an excellent article inveighs against the limited purview of those who claim for some special organ (*e.g.*, the eye, uterus, etc.) and its pathological conditions the cause of the most of the ailments to which flesh may be heir.

Reflex irritation means a limited or widespread exhaustion of the cortical nerve centres due to nerve currents, increased in force or duration, from peripheral organs malformed, undeveloped, or the site of pathological processes. It includes such molecular and chemical changes as may take place in the conducting nerve fibres from want of physiological rest.

Drew mentions as the abnormalities most likely to cause trouble the oblique varieties of hypermetropic astigmatism with nonparallel axes. The faulty relation between the power of the ciliary and internal recti muscles ranks next. Those who suffer most are the individuals who by

an effort can keep their eyes in line or can overcome their astigmatism, not those who, having a high degree of error, do not make the attempt to correct it.

Capps holds that it is not the direct effort of the eye to produce normal vision which induces an epileptic seizure, but rather the continued effort which is put on the filaments of the nerves of accommodation, which in course of time sets up a reflex condition of the sympathetic nervous system that produces the paroxysm, just as it does in other organs of the body. He then describes two cases in point where the correction of compound hypermetrophic astigmatism and of compound myopic astigmatism resulted in cure of the epileptic seizures.

Neuschüler's patient was a medical student who after prolonged reading suffered pain in the orbit, which spread to the teeth and caused such distress that he had to desist from study. One eye was emmetropic, the other myopic. Lenses were prescribed, but no benefit accrued; finally, prisms of two degrees with the bases in, were ordered for near work, when the dental pain was relieved.

Optic Atrophy Following Profuse Hæmorrhage.

Editorial, *Medical Record, Sept. 9, 1899.*

As a result of the study of these not altogether rare cases the following considerations were reached :—

(1) Thrombosis of the central retinal artery is the usual cause.

(2) The resistance offered the enfeebled blood current by the increased intraocular pressure is an important etiological factor.

(3) Exceptionally, thrombosis occurs in the central retinal vein.

(4) Very rarely, the loss of vision and ophthalmoscopic appearances are due to effusion or hæmorrhage into the optic nerve or its sheath, and here the damming back of the blood by the intra-ocular pressure may assist.

J. W. Stirling.

Reviews and Notices of Books.

G. F. Nuttall, M.D., Ph.D. "On the Role of Insects, Arachnids and Myriapods, as Carriers in the Spread of Bacterial and Parasitic Diseases of Man and Animals. Johns Hopkins Reports, Vol. 8, Nos. 1 & 2. Baltimore.

For some reason not easy to explain, the opinion that insects are a factor in the dissemination of disease, while easily taken up by the lay mind, has not been popular among pathologists, bacteriologists and medical men generally. The parasitologists alone from their frequent observations upon the successive stages of the life history of various worms in different animals and the obvious carriage of these worms from an individual of one species to one of another, have been for long prepared to recognise external parasites, insects and arachnids as agents in infection.

It has, for example, been with a very grudging consent that Patrick Manson's brilliant studies upon Filariasis have been accepted; his demonstration 20 years ago that mosquitoes act as carriers of the embryonic form of the Filaria Sanguinis Hominis, even though it was immediately confirmed by Lewis, and although during the last few years numerous observers in the tropics have further studied and advanced his observations, is only now gaining full credit. But now, after all these years of doubt, the remarkable studies of Surgeon-Major Ross—who may truly be regarded as a pupil of Manson—upon malaria and upon the nature of malarial infection, has brought into a very strong light the possible role played by insects in the spread of disease, and this work of Dr. Nuttall is most timely. Indeed, the monograph before us is invaluable. This bringing together of all the available material bearing upon one special topic may truly be said to be one of the great characteristics of modern American science and in medicine from the great Index catalogue of the Surgeon-General's Library and the Index Medicus, to this and similar monographs which have emanated from the Johns Hopkins School, the service rendered to our science by this spirit of conscientious compilation, cannot be too highly valued. Here in connection with the conveyance of disease, previous to Dr. Nuttall's work, there had existed no general survey of the subject, and Dr. Nuttall to obtain his hundreds of references has had to ransack the medical literature of all Europe and America extending over the last century and a half. The amount of work accomplished is as remarkable as it is valuable.

There are very full articles upon such subjects as: the Conveyance of Anthrax by the Fly and other Insects; Plague Infection; Hog Erysipelas; Chicken Cholera; Recurrent Fever; Yellow Fever; Cholera; Typhoid; Tuberculosis; Egyptian Ophthalmia; the Part Played by the Ixodidæ; in another section the Diseases due to Animal Parasites, are all passed in review, while the most important article in the work is an

admirable study of Malarial Infection and of the Mosquito Malarial Theory. Indeed, if we are not mistaken, it has largely been Dr. Nuttall's desire to give honor where honor is due, more especially in connection with the recent advances in the knowledge of the propagation of malaria, that has led to the production of this work.

Nuttall points out that so long ago as 1807 Dr. John Crawford, of Baltimore, would seem to have made some reference to the "Mosquital Origin of Malarial Disease," but we have to pass to the year 1883, when Dr. A. F. A. King, of Washington, D.C., published in the *Popular Science Monthly* an elaborate argument bringing together a mass of evidence on the subject which, as Nuttall points out, is by far the most masterly exposition of the theory which appeared until the recent discoveries were made. At later periods the theory would seem to have been rediscovered in various countries; thus in France, it is ascribed to Laveran, 1891; in Germany to Koch and Pfieffer, 1892; and in England to Manson, 1894; whilst in Italy, Bignami and Mendini in 1896, and Grassi in 1898, are quoted as the authors. Koch, indeed, states Nuttall, since his visit to India in 1883 and 1884, had always referred to the theory in his lectures. It is needless here to point out the various steps which led to the discovery that the malarial micro-organism passes one stage of its existence in the body of one form of mosquito, the *Anopheles*, or to give the details of the work undertaken by Ross at the suggestion of Manson. Nuttall brings out very clearly the undoubted claims of Ross to be regarded as the first discoverer of the true relationship, and shows how the observations of Bignami, Grassi and Bastianelli confirm Ross's observations in every respect, though apparently from their ignorance of English these latter observers have ignored certain of his observations and have taken the credit to themselves, just as somewhat earlier Koch had completely ignored the observations of Manson and Ross. At a period when we are apt to ascribe all important advances in bacteriology and parasitology to French and German observers, it is a matter of no little comfort to remember that it is to Manson, Lewis, Bancroft, Theobald Smith, Ross, Bruce, Macallum, and Councilman and Lafleur that we owe some of the most important fundamental observations upon the relationship between animal organisms and disease.

J. G. A.

S. G. Shattock, F.R.C.S.—An Atlas of the Bacteria Pathogenic in Man with Descriptions of Their Morphology and Modes of Microscopic Examination, with an Introductory Chapter on Bacteriology; Its Practical Value to the General Practioner. By W. Wayne Babcock, M.D., New York. E. B. Treat & Co., 1899. Price $1.00.

This work is a little beyond a reprint of the plates and letterpress published in the International Medical Annual for 1898 and 1899, to which has been added an introductory chapter upon the Practical Value of Bacteriology to the General Practitioner. The plates in question are very fair though not all of them appear to us to be thoroughly typical. Plate XXX for example, of the Tubercle Bacillus in Sputum, while representing one appearance frequently seen, is not what we should regard as the most common appearance, nor is the first figure of Plate

XIX, representing what is spoken of as the typical form of the Diphtheria Bacillus, wholly satisfactory in the print, nor has the material here depicted been selected to bring out prominently the characteristic grouping of the bacilli side by side.

Similarly, Plate XXIV, Fig. 1 of the culture of the Diplococcus Pneumoniæ (which by-the-by should be labelled, not encapsulated, but unencapsulated) represents a form in which the chain formation is much more pronounced than is ordinarily the case. But on the whole, for one wishing to have by him a cheap atlas of the leading forms of bacteria, the work can be recommended. The letterpress of Dr. Shattock and the introductory article by Dr. Babcock, which has been impressed into service, place matters simply and straightforwardly before the reader.

J. G. A.

THE NERVOUS SYSTEM AND ITS CONSTITUENT NEURONES: DESIGNED FOR THE USE OF PRACTITIONERS OF MEDICINE AND PSYCHOLOGISTS. By LEWELLYS F. BARKER, M.B. (Tor.), Associate Professor of Anatomy in the Johns Hopkins University, and Assistant Resident Pathologist to the Johns Hopkins Hospital. With two coloured plates and 676 illustrations in the text. New York, D. Appleton & Co., 1899.

Exceedingly valuable articles on the Anatomy and Physiology of the Nervous System and its Constituent Neurones, by Dr. L. F. Barker, were published at different times in the *New York Medical Journal*, in the years 1897, 1898, and those who have been familiar with his contributions will be pleased to hear that his articles, plus a considerable amount of added matter, have been put into book form. Dr. Barker's volume is an epitome of what is to-day known of the histology of the central and peripheral nerve organs. The subject is presented in an unusually attractive, clear and forcible way. It is profusely illustrated, coloured and uncoloured, which is a very great help to the student reducing the amount of text to a very considerable degree. The book opens with an introduction to the newer conception of the central and peripheral nerve organs. Sections I, II, III and IV, are the articles that appeared in the *New York Medical Journal*, revised and brought up to date. Sections V and VI, dealing with the known tracts in the nervous system are published for the first time and are written from the point of view of a modern neuron-theory. This new field offers many fascinating opportunities for investigation and speculation, into which the author has entered with eagerness and with sufficient definiteness, stating many propositions, which although speculative in their nature, are accepted by the most advanced workers in the field. Section V, on the histo-genetic relation of the neurons, and Section VI on the grouping and chaining together of the neurons deserves special mention, for as a rule those subjects which are ordinarily so difficult for the student to grasp are presented in a way that can be easily followed and understood. Chapters 28 to 31, dealing with the neurons connecting the sense organs of the body with the central nervous system are profusely illustrated and are works of art, many of them appearing for the first time.

The arrangement of the subject matter, the foot notes and index, helps one to get through an enormous amount of material in a very short time. This book stands out above all others in brain anatomy and pathology by its essentially readable character. Too often works of this nature are written in such a style that only the specialist can comprehend them, even then only when he has a wet towel on his head. The book shows clearly that it is the handwork of an indefatigable, keen critic and broad minded student, abreast of the progress of the work of his chosen field. The type, paper, and general get-up of this large book are in every way excellent and it is a pleasure to recommend it. I am sure that it will find favor and meet the requirements of the practitioners of medicine and students of medicine and psychology.

D. A. S.

A Manual of Modern Gastric Methods, Chemical, Physical and Therapeutical. By A. Lockhart Gillespie, M.D., F.R.C.P., F.R S.E. Oliver & Boyd, Edinburgh, 1899.

In a comparatively small space the author has succeeded in giving a clear and sufficiently detailed account of the different methods used in the clinical investigation of disorders of the stomach.

A short description of the condition present in healthy digestion is followed by the consideration of the methods of obtaining the contents of the stomach, including a list of the principal test meals in use, and a full description of the use of the stomach tube for removing the stomach contents. This latter section is especially satisfying in drawing attention to the various obstacles commonly met with in carrying out the procedure, and in pointing out the manipulations by which they may be overcome. The necessity of insisting on these details will be fully appreciated by all who have had a considerable experience in the use of the stomach tube. There is a short chapter on the macroscopic and microscopic examination of the stomach contents. The bulk of the volume is devoted to the chemical examination of the stomach contents. Tœpfer's alizarin method is recommended for the estimation of the free and the combined hydrochloric acid, and the author adds a ready method of his own, a modification of Hayem and Winter's method, based on the estimation of acidity of stomach contents before and after evaporation and controlled by qualitative tests for the presence of free mineral acids or of organic acids.

In the section on mechanical methods used in the treatment of diseases of the stomach a number of the elaborate modern instruments are described and figured, particularly those of Einhorn and Turck, and a special chapter written by Dr. John Thomson, is devoted to the mechanical methods used in young children. The volume is concluded by a list of apparatus and reagents required and an appendix containing a description of new "intragastric instruments"

There are few errors to record. One of them is the statement that "the pylorus is 1.8 cc. distant from the cardiac end in the empty stomach but after food only 1.4 from it."

H. A. L.

SYPHILITIC DISEASES OF THE SPINAL CORD. By R. T. WILLIAMSON, M.D., F.R.C.P., Medical Registrar, Manchester Royal Infirmary; Assistant to the Professor of Medicine, Owens College. With illustrations and four coloured plates. Pp., 127. Manchester, Sherratt & Hughes, 1899.

The author in this work gives a very complete description of the different varieties of spinal syphilis. The following forms are described :—

(1) Syphilitic disease of the vertebræ.
(2) Chronic syphilitic meningitis.
(3) Meningo-myelitis.
(4) Paraplegia of acute onset (acute myelitis).
(5) Chronic syphilitic spinal paralysis (Erb's spinal syphilitic paralysis).
(6) Spinal tumour.
(7) Anomalous forms, the symptoms simulating various other spinal diseases which are usually looked upon as nonsyphilitic in origin. Cases simulating spinal disseminated sclerosis, primary lateral sclerosis, anterior poliomyelitis, idiopathic muscular atrophy, etc., etc., have been met with.
(8) Post syphilitic degeneration—locomotor ataxia.

It would seem that there are few diseases of the cord which may not be either brought about by or simulate syphilis. Its importance therefore as a possible etiological factor should be always taken into consideration.

The work is profusely and well illustrated and bears the stamp of careful work, much of which is from personal observation.

J. S.

ON THE RELATION OF THE NERVOUS SYSTEM TO DISEASE AND DISORDERS IN THE VISCERA. Being the Morison Lectures. Delivered before the Royal College of Physicians in Edinburgh, 1897 and 1898. By ALEXANDER MORISON, M.D., Physician in Charge of Out-Patients to the Great Northern Central Hospital and the Children's Hospital, Paddington Green. Edinburgh and London, Young J. Pentland, 1899.

The Morison Lectures, six in number, which first appeared in the *Edinburgh Medical Journal*, are here reproduced with some additions in a handsome volume of a little over 100 pages. We congratulate the author on the very excellent character of the work.

The first and second lectures are devoted to the anatomy of visceral innervation. The third deals with the physiology and the fourth with the pathology of visceral innervation. The fifth lecture is concerned with the disorders of visceral sensibility while the sixth has to do with the disorders of visceral motion. Both form solid and valuable reading for the thoughtful practitioner. A concluding chapter on the relation of body and mind is one of great interest.

The work is properly illustrated and beautifully printed.

J. S.

MINOR SURGERY AND BANDAGING. By HENRY R. WHARTON, M.D., Demonstrator of Surgery in the University of Pennsylvania, Surgeon to the Presbyterian Hospital, etc. Four Edition, thoroughly revised and enlarged, with 502 illustrations. Lea Brothers & Co., Philadelphia and New York, 1899.

This work is too well known to need any commendation. In addition to the clear and concise description of the elementary surgical procedures, with which every student should be thoroughly conversant, this edition includes a chapter on Surgical Bacteriology. A brief description of such major operations as can be practiced upon the cadaver adds to the value of the book.

K. C.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK, JAMES STEWART,
A. D. BLACKADER, J. GEORGE ADAMI,
GEO. E. ARMSTRONG, G. GORDON CAMPBELL,
WILLIAM GARDNER, FRANK BULLER,
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WYATT JOHNSTON, T. J. W. BURGESS, H. S. BIRKETT,
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A. E. GARROW, E. J. SEMPLE, A. G. NICHOLLS.

VOL. XXIX. JANUARY, 1900. NO. 1.

UPON MILK AND TYPHOID FEVER.

Once again, after an interval of some few years, we in Montreal are brought face to face with an epidemic of typhoid fever, obviously due to the milk supply and narrowly limited to those obtaining their milk from an individual dealer. While we cannot but feel some sympathy with the dealer, who from the first intimation that anything was wrong would seem to have done all that lay in his power to prevent the spread of the disease and who is temporarily ruined by the misfortune which, unwittingly, he has brought to so many households, we cannot allow this feeling to overweigh or indeed to approach our concern for the many families into which a terrible anxiety, and indeed in some few cases actual mourning, has been brought by a criminal disregard or ignorance of the ordinary rules of hygiene. For some one has certainly been careless of the danger accruing to public health which ensues from faulty water supply. At some one point or other the water employed to wash the cans or the vessels in which the milk was placed, had become contaminated from typhoid excreta.

The important question that ought to be immediately answered is how we in Montreal, as indeed in other large cities throughout the Dominion, are to legislate in order to prevent such epidemics as typhoid through milk. Preventable they are, and prevented they must be.

Up to the present time the City Milk Inspectors are powerless outside the city limits, or, in other words, while practically all the milk supply of the city is drawn from outside the city limits, the city authorities have no right to inspect outlying farms and to condemn unsanitary buildings, defective drainage, etc., or to order alterations in same. The question before us is by what means can the city gain control over those farms and over their milk supply ? It would be possible to obtain the passage of a law at Quebec giving the city the necessary powers, but any such legislation on the part of the city might be opposed by country members, while again it has to be remembered that not a little of the Montreal milk supply comes from the neighbouring province, and it would certainly be out of the power of Montreal authorities to gain any control by this means over the Ontario farmers.

This method, therefore, is doomed to failure. On the other hand, we think it would be possible to obtain the passage of a city by-law to the effect that no dealer be granted a license to distribute milk within the city limits unless he at the time of application for such license and whenever called upon, produce a full list of the farms from which he receives his milk supply, together with written and signed forms of consent on the part of the farmers themselves affording that milk supply to permit the inspection of their farms by city officials and to carry out the directions of those officials with regard to alterations in unsanitary premises and the condemnation of diseased animals. And this by-law should include the further proviso that failure on the part of the farmer or dealer to carry out the provisions of the by-law *ipso facto* renders the license null and void, and arrests the sale of milk within the city limits by the holder.

The passage of such a by-law would necessitate the establishment of a small corps of duly qualified travelling inspectors on the part of the city, and to this extent would entail a certain amount of expense ; to meet this expense the license fees should be sufficiently large.

On the part of the householder there are very simple precautions which can be taken to prevent the danger from the use of possibly contaminated milk. Despite the abundant literature contained in our city papers during the past year, these precautions do not appear to be by any means generally recognised. We have received several enquiries from householders asking what they should do to protect themselves against possible infection. Without exception it has evidently been news to those householders that keeping the milk for a short time after receiving it at a heat above 150° F., but below boiling point, will effectually destroy any disease germs likely to be present.

This ignorance on the part of the ordinary householder with regard to the keeping of milk in good condition, renders it clear that it is not to

the householder but to the dealer that the authorities must look for the proper treatment of the commodity. And when we consider that not a little of our milk comes from places which are from 50 to 100 miles distant and that consequently, instead of the morning milkings being delivered at the house in time for breakfast, inevitably half a day elapses between the milking and the delivery in by far the greater number of cases, then it is for the city and the dealers to recognise that the time has come so to treat the milk as to arrest in it the growth of micro-organisms, and this matter is so simple that there is no excuse for not carrying it out. There is one large firm of milk dealers in this city which at various points in the country round Montreal has receiving stations where the milk as it comes in is filtered, Pasteurised and then cooled. The objection to this process on the grounds that it alters the taste of the milk, is, it seems to us, effectually met by the fact that now for some long period this firm has, without saying anything, delivered this milk in the Pasteurised condition, and that instead of complaints coming in to the firm on account of poor taste, the large corporations employing the milk of the firm in question have complimented it upon the uniform and good keeping quality of such milk. That firm is rapidly extending its sale and is succeeding, as it is bound to succeed.

We sincerely trust that this object lesson which it affords will eventually force the other dealers in this city to recognise that milk for city purposes is a fluid that requires special and careful handling and that the public demands in connection with the milk supply, as in connection with other departments of agriculture, that the teachings of modern science and the application of the same shall not be neglected, but shall be utilised both for the benefit of the public and of the individual.

How many householders, we wonder, make any detailed enquiries as to the source of the milk supplied to their families, or have the faintest idea as to the sanitary state of the cattle from which it is derived, or know how it has been handled ? But even with this indifference, the knowledge that there are dealers in the city supplying an absolutely wholesome article ought surely to tell in favor of employing those dealers. There is, we know, a sentimental objection to dismissing a tradesman who has for years served the family indifferently well, and this is not confined to the weaker members, "*salus populi suprema lex.*" And if that tradesman will not employ modern and sound methods, it is not a matter of ingratitude ; the blame is his if his custom falls off. Above all, it is for us as medical men to instruct those depending upon our council with regard to the wisdom of employing pure milk.

THE

MONTREAL MEDICAL JOURNAL.

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Original Communications.

REPORT UPON EIGHTY-NINE CASES OF APPENDICITIS TREATED IN THE ROYAL VICTORIA HOSPITAL, MONTREAL, DURING THE YEAR ENDING 31ST DECEMBER, 1898.

BY

E. L. ARCHIBALD, M.D., (formerly) Resident House Surgeon.

During the year 1898, 89 cases of appendicitis were admitted to the surgical wards of this hospital. Of these there were operated 73. The appendix was removed incidentally during operation for three other conditions,—one a cancer of the sigmoid flexure, in which the appendix *per se*, was acutely inflamed; the second, a pyosalpinx, in which the appendix showed external inflammation by contiguity; and the third an intra-peritoneal lumbar abscess of unknown origin, in which the appendix was normal. Three others, admitted last year, were treated to a conclusion during this year. The statistics which follow are based upon an analysis of those cases only in which the appendix was removed, and in which, therefore, the condition of the organ was clearly demonstrated.

In preparing a statistical report of any considerable number of appendicitis cases, one is met at the outset with the difficulty of a suitable classification. The lesions of the disease are protean both in character and in degree. Symptoms vary from those of the so-called appendicular colic up to those of a perforative general peritonitis. As a consequence, classifications are numerous, and of those who have written treatises upon the subject scarcely one but has formulated his own. Some ground their classification upon a purely anatomical basis, others on a purely pathological basis, others on a clinical basis, and still others on a combination of two or of all three.

For the purposes, however, of a hospital report such as the present it seemed to me necessary to devise a classification which would present

the result of a comparison of the pathological findings in the operated cases with the corresponding case reports. The possible value of such a report must lie mainly in the direction of advancing clinical knowledge, must help towards the end of accuracy in diagnosis. Any advance, however, in systematized clinical knowledge must be made along the lines of types elaborated in details. These types—in any disease the pathology of which is at all definitely known—must be primarily pathological and secondly clinical. That is, working backwards from the pathological findings to clinical data, we seek by induction to establish classes in which frequently recurring pathological lesions correspond—if not in all cases, at least in a large majority—with frequently recurring clinical signs and symptoms. And when we have enough of the particulars we shall be able to lay down definitely the general.

Advance, therefore, lies in the amassing of a large body of reliable particulars and their analysis in thorough and elaborate case reports; in careful cross examination of the patient as to details, and in a rigid comparison of these clinical data with subsequent operation findings. These are the trite, every day, almost instinctive principles of every observer, but they have need of being kept prominently in mind in analysing any series of hospital cases, and must form the basis of classification for such cases.

Upon these lines, therefore, the following classification was devised. It is confessedly incomplete, insomuch as it embraces only such cases as occurred in the hospital surgical service during the year, leaving out of account the specific inflammatory affections,—tuberculous, typhoid, actinomycotic—of which we had no examples.

Thus :—

Class I.—

The appendix enlarged and often twisted, kinked, or strictured ; the mucosa swollen ; the walls thickened ; there may be small submucosal hæmorrhages, innocuous concretions, or even slight ulceration ; and there may be adhesions externally.*

Class II.—

In which the appendix, with or without the lesions of Class I., is distended with pus, the mucosa ulcerated, and the serosa and meso-appendix are inflamed.

Class III.—

In which the appendix is gangrenous, in whole or in large part ; but without perforation.

* The term catarrhal has been frequently employed—in a very general and rather loose way—to designate a majority of the cases of this class.

Class IV.—

In which the appendix is perforated, and there is more or less localised peritonitis with abscess.

Class V.—

In which there is general septic peritonitis, following perforation of the appendix, or following septic lymphangitis from a non-perforated appendix.

It is seen, therefore, that mild inflammation with absence of pus, the retention of pus, total rapid gangrene and perforation, are taken as the main pathological landmarks to be kept in view in the clinical consideration of any case. That the classes I, III, IV and V, represent definitely separated pathological conditions, which in the main correspond to definite separable clinical phenomena, will, I think, be generally allowed. The *raison d'etre* of class II, is more doubtful. The pathological entity is certainly definite. That it causes, however, symptoms which enable it to be diagnosed clinically is perhaps not generally allowed, and the examples of the condition in this series are too few and the clinical signs in these too incomplete to afford more than slight indications in any direction. Nevertheless it is included in the classification in the hope and belief that larger statistics may bring to light clinical symptoms which can be considered as more or less characteristic of the lesion.

"Ulcerative" appendicitis, which appears in so many classifications, finds no place in the present one because, though it is certainly often the remote cause of definite symptoms—cicatricial stenosis, perforation, etc.,—it cannot be said to cause symptoms peculiar to itself, symptoms which enable it to be diagnosed clinically.

It is evidently out of the question to draw conclusions of a far reaching nature concerning such points in the disease as are debatable upon the basis of comparatively so few cases. Statistics of this nature are of value mainly as a contribution to a much larger body of facts which are needed for the study of clinical details. It may, however, be permitted to draw attention to a few of the points which are boldly stated below.

With regard to age, although a very decided majority of the total number of cases came under observation during the age-decennium of 20 to 30, many of these dated their first attack back to that of 10 to 20. Patients come under hospital observation comparatively rarely during a first attack.

In the series of 70 case-reports the question of previous attacks is mentioned in all but three, in all of these with two exceptions the patients had had such. It is noteworthy that these two exceptions

were cases of perforation and general septic peritonitis. That the statistics of other observers do not give such a large percentage of previous attacks is possibly due to insufficient cross examination of the patient. Many patients as a matter of fact answer the question at first with a negative, but on a repetition of the question, admit freely that they have had attacks of pain in the same region before, adding frequently explanatory remarks, such as "but not nearly so bad as this time," or "I was only laid up for a day or so, not worth mentioning." It is a matter of general experience that the appendices of such persons show evidences of previous slight inflammation. Not only that but these same evidences are found none too seldom in patients who have denied all previous attacks.

The preponderance of the male sex is striking: males, 55; females, 15.

Chronic constipation or diarrhœa, chronic or acute indigestion, and over-exertion, usually inculpated in text books as ætiological factors, do not seem to have played in the present series any definite rôle.

With regard to the ætiological relation between concretions and perforation, it is worthy of note that of the 38 nonperforated cases concretions were found in 3, while of the 32 perforated cases they were present in 15, and of the 9 cases in which perforation led to a diffuse septic peritonitis, concretions were found in 7.

That the "onset pain" of appendicitis in general is typically "crampy" or "wavelike," as stated by some authors, does not seem to be borne out. It is very variable both in character and degree. The personal equation in the description of pain plays a very great rôle.

Chill is a rare event in all forms of appendicitis, even in those which perforate and go on to general sepsis. Nevertheless, it is possible that the slight indication afforded by the histories of the present series to the effect that in empyema of the appendix chilliness, at least, was present in half the cases—as one expects in conditions of retained pus,—it is possible, I say, that this indication if well worked out in future case reports, may become a diagnostic sign of some value.

That the totally or extensively gangrenous appendix before perforation may not infrequently be diagnosed, is generally allowed. Yet the signs given by some authors (e. g., Deaver) viz:—abrupt cessation of pain, fall in temperature, anxious expression of countenance, and increased pulse rate, were in the four cases of this series, with the exception of the last mentioned, largely absent. One point, however, which has been more especially noted in the present cases, and generally in the Royal Victoria Hospital surgical service, as indicating the probability of a gangrenous appendix, is the occurrence of a treacherous lull in the pain after a few hours of onset pain, the pulse rate, nevertheless, remaining high or going still higher. In this point, naturally, hospital

case-reports suffer often from insufficient data with regard to the pulse and temperature during the period from onset to admission. The point needs a more elaborate working out in order to settle its importance as a diagnostic factor. With regard to data which might help us to the clinical diagnosis of "imminent perforation," the present statistics yield nothing noteworthy beyond what is above mentioned in connection with empyema and gangrene of the appendix. Progress in this direction would seem to lie in the more thorough and exact history of pulse and temperature, especially the former, from the time of onset up to that of observation in hospital. Exact written records, so far as is possible for the attending physician to make them, would in this respect be of the greatest use.

Concerning the signs of perforation, the statistics, I believe, show that the very distinct value should be ascribed to a history of marked exacerbation of pain occurring at any time after the first few hours.

Painful micturition as a sign of pelvic peritonitis was inconstant. Its presence indicated certainly the condition, but its absence did not certify the absence of a pelvic peritonitis—far from it.

Local tumour could rarely be felt when the peritonitis had become general, but was nearly always palpable in localized cases. With regard to the other clinical signs of localized and general peritonitis, no special remark is called for.

Statistics concerning pulse and temperature were not made out, mainly because of the lack of data before entrance to hospital with which to form a comparison. Isolated observations in the short time between admission and operation are of no use, in so far as statistics are concerned.

With these preliminary remarks I venture to submit the following details :—

Excluding the three cases of abscess mentioned below, we have a series of 70 which have been analysed.

Class I. includes 28 cases ; Class II. 6 cases ; Class III. 4 cases ; Class IV. 22 cases ; Class V. 10 cases.

Three cases of abscess, diagnosed as being due to a perforation of the appendix, are not included in the analysis, inasmuch as the abscess was merely incised and drained, and the appendix not demonstrated. There were 16 cases not submitted to operation. Of these 12 were of the acute type, and subsided within two or three days ; three were recurrent, and one was a chronic abscess following perforation.

Of the 89 cases, 73 were cured ; 2 were improved ; 1 was not improved ; 3 were not treated ; and 10 died. The mortality is thus 11.2 p c. Of the fatal cases, nine were of the general septic peritonitis class, and one was a suppurative mesenteric lymphadenitis subsequent to a chronic inflam-

mation of the appendix of long standing. It is seen, therefore, that the mortality in all but the gravest type of appendicitis is nil ; all the clean cases, and all the perforation cases with localised trouble, even where the localisation was very slight and pus filled the whole right side and pelvis, recovered.

Passing now, to a review *seriatim* of the classes above mentioned, we find the following facts of interest :

CLASS I.—28 Cases.

Ætiology :

Ages—10 to 20 years	.....	3
20 to 30 "	.....	12
30 to 40 "	.....	9
40 to 51 "	.....	4

Sex—Male, 20 ; female, 8.

Previous Attacks—One had one ; one had two ; two had three or four ; and all the rest many—most of them slight, but a few severe attacks.

Previous Constipation—Thirteen had none ; twelve had more or less chronic trouble ; and in three the condition is not mentioned.

Previous Diarrhœa—Only in one case ; not present in the others.

Chronic Indigestion is mentioned only in one case.

Over-exertion is mentioned in five cases.

*Micro-Organisms—B. coli comm. was found in all cases in which cultures were taken.

Concretion was found in only one case ; this was a subacute condition, with tip somewhat distended, and mucosa hæmorrhagic.

In no case is it mentioned in the histories that especial errors in diet or acute indigestion preceded the onset of pain.

Clinical Course, Signs—

Onset—Pain varied a great deal in its character. In only nine was it of the typically crampy nature usually described. In some it was "slight," in others " severe" from the first. In others it was " dull," " burning," " aching," or " smarting." Whether mild or severe at the onset, the pain, in the later course, became generally severe, although in a few cases it is described as mild throughout. Still later, pain usually subsided into a dull soreness.

Situation of the Pain at onset was in nine cases " generalized ;" in four " umbilical ;" in three in " lower abdominal zone ;" in one " epigastric ;" in nine " right iliac." In several instances it is noted that, whereas the pain at the onset was generalized in the first attack, it was right iliac in succeeding attacks.

In all cases, save one, where the onset-pâin did not begin in the right iliac region, it is noted that it settled in that region sooner or later. In

* In what follows the bacteriological reports are not submitted as being of absolute value, inasmuch as when smear cultures are taken and no Petri plate made till the next day (as was the case in the majority of cultures), the B. Coli may kill off other organisms originally present by the rapidity of its growth. The suggestion is owed to Dr. Adami.

the one exception, symptoms throughout were those of a "chronic belly ache."

In twenty-three cases, where the date of the first attack is mentioned, it is found that five were within a year previous to admission; nine from one to two years; three from three to four years; the others dated back to five, six, eight, fourteen, eighteen and twenty-three years.

In twenty-one cases there was no resistance to palpation. In three there was slight, and in one considerable resistance.

Tumour in the right iliac region was felt in six cases; in five slight and indefinite, the appendix alone being swollen; in one marked, omentum, cæcum and ileum being all adherent round appendix. In the rest it was absent.

Vomiting occurred in 17 cases, *i.e.*, 60 p.c., absent in 11.

Interval Troubles in Recurrent Cases—

In fifteen (53 p.c.) there was a definite history of chronic trouble in the intervals of attacks. In twelve of these it was chronic soreness in the right iliac region, and in two this was sufficient to render the patient invalid. In one it was a flatulent dyspepsia. In five there was chronic constipation as well, and in one diarrhœa.

Chill—In four cases. Apparently rather chilly feelings than actual rigors.

Time of Operation—All were performed in the interval, the shortest lapse of time after the last attack being ten days.

Menstrual Troubles were found in two of the eight female cases.

All the cases were discharged cured, except two. Of these, one was a case of chronic inflammation, where the appendix lay embedded in very dense adhesions. Histologically there were found evidences of a chronic inflammatory process, which had gone on so far as to produce slight necrosis of the submucosa. In the after course he developed hæmaturia, a large mass in left hypochondriac and lumbar region, and finally, two months after operation, a second large mass in the right hypochondrium, becoming meantime steadily weaker. He finally insisted on going home, and has not been heard from since.

The other was a case where the appendix was found firmly adherent to the posterior wall of the abdomen and the brim of the pelvis; and the mesentery showed large, fused, glandular masses, which were considered to be the result of a suppurative lymphadenitis by extension from the appendix. Histologically the appendix, according to the Pathological Report, showed only a condition of "chronic catarrhal appendicitis." This case gradually sank, and died 15 days after operation.

There were no complications, save in the two cases just mentioned, and in one other, where hysteria developed seventeen days after operation.

CLASS II.—Empyema of the Appendix. Six Cases.

In these the element of retained pus introduces a new factor into con-

sideration. In three the pus was thick, fœtid, and greenish ; in two it was a purulent fæcal fluid ; and in one it was a " bloody grumous" fluid.

Sex—Five were males ; one female.

Ages—19 to 33 years.

Previous Attacks—One had had two slight ones in past two years ; two others had had frequent attacks ; one had had three severe ; one four severe and one six slight attacks.

Chronic Constipation was present in one case. Chronic diarrhœa in two cases.

Concretions were absent in all.

Bacteria—Coli commune in three ; mixed staphylococci and streptococci in one ; one sterile ; no report in the other.

Clinical Course—

Pain at the onset in all was around the umbilicus, and crampy or severe in nature ; later it became localized to right iliac region.

Resistance to Palpation in three cases ; absent altogether in one case, and amounting in great local rigidity in two.

Restlessness—Noted only in one case.

Local Tumour—Slight in three ; in two due to swelling of appendix alone without omentum ; in one, due also to omentum.

Distension—Absent in all, save one, where it was slight and local.

Vomiting—Present in all.

Chill was present in three, but slight ; only chilliness.

Date of Operation—In one, 23 hours after onset ; in one, 40 hours ; in one, two and a half days ; in one, three and a half days ; and in two in the interval.

In this class of cases, one notices the more frequent occurrence of chilly feelings, (viz., in 50 p.c. of the cases), which, though not amounting to rigor, may possibly be considered of some diagnostic value.

CLASS III.—Non-perforated, Gangrenous Appendix. Four Cases.

In two of these, gangrene involved about half the appendix ; in two the whole organ. In one case it involved also a considerable area of the cæcum where the appendix lay against it.

Age—19 to 36.

Sex—Three males ; one female.

Previous Attacks—Three had had occasional slight attacks, one had had none.

Constipation had not preceded the attack in any case ; nor had diarrhœa.

Organisms—B. coli commune in one case ; mixed coli and staphylococci in another ; sterile in another ; no report in the fourth.

Concretions were present in two ; in one four small, and in the other one small concretion.

Clinical Course—

Pain began mildly in three of the cases ; in the other it was very

severe from the first. It was situated, at the onset, in the "lower zone" in one case; in the epigastrium and right hypochondrium in one; and was "generalised" in two. There was no definite exacerbation of the pain in any of the cases. In one it was never severe. In all, it became, sooner or later, localized to the right iliac region.

Rigidity present locally in all cases.

Restlessness noticed in two cases.

Local Tumour in two cases.

Distension—Slight local in one case; slight general in one.

Vomiting present in two cases only; and then very slight.

Chill was not present in any case.

Complications—

In one case a slight nephritis was present at time of operation. This case also developed a left-sided phlebitis about a week after operation.

Operation was performed in one case 48 hours after onset; in one 32 hours; in one 78 hours; and in one on the ninth day. The latter would, no doubt, have perforated long before operation, had the appendix not been bound down to the cæcum, and the gangrene gradually involved the whole thickness of the wall of the latter, into which, indeed, it was on the point of perforating.

In these cases it is noticeable that the signs of gangrene usually given—abrupt cessation of pain, fall in temperature, increased pulse rate and anxious expression—were largely absent.

The histories note a treacherous lull in the pain following the severe pain of the onset, the pulse, however, keeping up.

All the cases made perfect recoveries.

CLASS IV.—Perforation with Localised Peritonitis and Abscess. 22 Cases.

The size of the abscess varied greatly; in some it was extremely small; in several it extended through the whole right side from the liver down, and filled the pelvis. All, however, made good recoveries.

The position of the appendix was in four cases south, over the brim of the pelvis; in all the rest except two, where nothing is said on this point, it was curled up behind or outside the cæcum. The position of the perforation varied too much for generalisation.

Ætiology:

Ages—Up to 10 years	.....	1 case
10 to 20 "	.....	10 cases
20 to 30 "	.....	6 "
30 to 40 "	.....	3 "
57 "	.....	1 case
65 "	.....	1 "

Sex—Males, 20; females, 2.

Previous Attacks—Nine had had none; two, one; two, three; two, five; four, many; and in three the point is not mentioned.

Previous Constipation—Chronic constipation was present in five; in three not mentioned; in the rest absent.

Previous Diarrhœa absent in all.

Concretions were present in eight cases.

Bacteriology—In fifteen the bac. coli was found in pure culture ; in three bac. coli and staphylococcus albus mixed ; in one staphylococci alone ; in one sterile ; in two no report.

Clinical Course—

Pain—Character at onset was, in 13 cases, crampy ; " slight " in seven and " severe " in ten.

Site at onset was " generalised " in 11 ; umbilical in one ; right iliac in six ; and in the " lower zone" in two ; in two not mentioned.

In practically all cases pain became, before long, localized to the right side, and if slight at first soon became severe ; still later subsiding to a greater or less extent. Following this initial pain, there occurred, according to the histories, in a large proportion of the cases a very distinct exacerbation, such as is often said to indicate perforation.

Distinct exacerbation in 10 cases. (In one of these where there were two perforations, one of the ascending colon, the other of the appendix, there were also two distinct exacerbations).

Indefinite exacerbation in three cases.

Distinctly no exacerbation in four cases.

Not mentioned in two cases.

Pain extremely severe from the onset in three cases.

Local Tumour was felt in all but three.

Distension was present in 11 cases, in 9 of which it was local and slight or moderate ; in two moderate and general. In the rest absent.

Vomiting occurred in 16 cases ; nausea alone in two ; both absent in the rest.

Constipation—During attack, found in six cases ; diarrhœa in one ; in the rest absent or not mentioned.

Painful Micturition noticed in two cases ; in both the pelvis was filled with pus.

Chill was found in only three cases ; in one very slight. It was most marked in a case of large and long-standing (three weeks) abscess.

Date of Operation—Two were operated within 24 hours ; 4 within 48 hours ; 2 within 72 hours ; 11 within 1st week ; 2 within 2nd week ; 1 within 3rd week.

Complications—

Fæcal Fistula in two cases ; in one, present at operation, healed spontaneously in eight days ; the other developed a week after operation ; healed spontaneously in three or four days.

Hæmaturia developed in one case on fifteenth day after operation ; persisted for 15 days ; then disappeared completely. It was in the first specimen only in macroscopic amount ; for the rest of the time microscopic, and was unaccompanied by other symptoms. Remained unexplained.

Double Phlebitis in one case ; first in left leg ; immediately afterwards in right.

Nephritis in three cases.

CLASS IV.—General Septic Peritonitis.

During the year ten cases of this condition were admitted and operated. By the term "general" is meant an involvement, as demonstrated at operation, of the whole lower half at least of the abdominal cavity. Of the ten cases nine died, a mortality of 90 p.c. All, except one, were due to an acute perforating appendicitis. The one exception showed an appendix not perforated, but with a hæmorrhagic, greyish mucosa, swollen, and in parts necrotic ; and this was considered to be the cause of the general peritonitis by extension along vessels.

Sex—Males, 7 ; females, 3.

Ætiology :

Ages—	1 to 10 years	1 case
	10 to 20 "	2 cases
	20 to 30 "	3 "
	30 to 40 "	2 "
	53 "	1 case
	57 "	1 "

Previous Attacks—Two had had none ; three, one attack ; two, several slight attacks ; and three, many, of which some had been severe.

Previous Constipation—Chronic trouble had been present in two cases ; in two, absent ; and in the rest the point is not mentioned.

Previous Diarrhœa—Definitely absent in three ; not mentioned in the rest.

Position of the Appendix—In three cases the appendix pointed south and extended over the brim of the pelvis ; in all the others it was curled up behind, or behind and outside the cæcum.

Chronic Indigestion, previous to the attack, is mentioned only in one case.

Concretions were found in seven cases ; in three they were absent.

Organisms—Cultures taken at operation yielded, in eight cases, a pure growth of B. coli com. ; in one case a mixed growth of staphylococcus aureus and B. coli com. ; and in one case they remained sterile.

Clinical Course and Signs—

Onset—In six cases the pain was slight at the onset, becoming severe later ; in the other four it was severe from the first.

In eight cases the pain was generalised at first ; and in two it began in the hypogastric region. Following this, it became localised to the right iliac region in four cases, and remained general in four.

In all cases there was generalised tenderness to pressure over lower half, or more, of the abdomen, but in a majority of cases this was worst in the right iliac region.

There was considerable resistance to palpation all over the abdomen in three cases ; in the rest there was absolute rigidity.

Restlessness was marked in four of the cases.

Tumour was made out only in two cases ; in one of these from the rectum ; in the rest, rigidity prevented proper palpation.

Distension, generalised, was present in nine, and absent in one.

Vomiting was present in all cases, and in a majority was marked.

Constipation during the attack was present in four cases ; in four it was definitely absent ; in two, not mentioned.

Diarrhœa during the attack was not present in any case.

Costal Respiration was noted in six cases ; not mentioned in four.

Urinary Disturbance was found in two cases ; in one retention, previous to operation ; in the other, albuminuria with casts, and considerable frequency.

Chill was rare ; it was noted only in two cases.

Cathartics—There is a history of the exhibition of cathartics in eight cases. In one case an exacerbation of symptoms and probable perforation followed a saline purge. In the others no definite connection could be traced between the cathartic and perforation. In some, certainly, the cathartic was given after perforation had occurred.

Lapse of Time between Onset and Operation—In one case, 26 hours ; in two cases, 24 to 48 hours ; in two cases, 48 to 72 hours ; in two cases, on 4th day ; in one case, on 6th day ; in one case, on 7th day ; in one case, on 16th day.

In the one case that recovered 72 hours had elapsed since onset.

In six cases the perforation may be said to have been primary from the appendix ; in two it was probably secondary from a pre-existing abscess ; and in two the point is doubtful.

The peritonitis in all cases but one was of the sero-purulent form ; in one case it was of a plastic character, with more or less delimited collections of thick greenish pus here and there between the coils of bowel.

Time of Death—One case was moribund before operation, and died on leaving the table. One died ten hours after operation ; one 50 hours ; two 68 hours ; one 72 hours ; one 88 hours ; one 96 hours, and one 106 hours after operation.

Complications—None, except nephritis in one case.

In conclusion, I wish to express my thanks to Dr. Bell and Dr. Garrow, in whose services the above cases occurred, for their kind permission to make use of this material ; to Dr. Bell also for advice and assistance in the preparation of the report. And I would further express my indebtedness to Dr. Keenan and Roy, by whom a majority of the case reports were compiled, and to Drs. Bradley and Brown to whom I owe the pathological data.

ON THE ÆTIOLOGY OF THE NAUSEA AND VOMITING OF PREGNANCY.*

BY

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The purpose of this preliminary paper is to advance a theory, which seems to be founded on sound physiological grounds, of the causation of the nausea and vomiting of pregnancy.

In a brief review of the somewhat copious recent literature of the subject I have been unable to find anything which leads me to think that the theory which I wish to advance is other than new.

The vomiting of pregnancy is usually divided into two classes, namely: the mild or physiological; and the severe or pathological, hyperemesis gravidarum. The mild form, with which this paper particularly has to deal, occurs in the vast majority of cases of pregnancy.

In a brief paper it is impossible to refer to the various theories which have been advanced from time to time in explanation of the origin of this vomiting of pregnancy. That there exists in the pregnant woman a condition of exaltation of nervous tension all are agreed. A few consider that the origin lies in direct irritation of the medullary centres by toxic material circulating in the maternal blood. Others explain the irritation as originating peripherally, either in uterine contractions or in abnormal states of the gastro-enteric tract.

Exactly how conditions about the uterus give rise to peripheral irritation has been variously explained. Mechanical pressure of the enlarging uterus on the nerves of the pelvic ganglion; stretching of the muscle fibres of the uterus causing pressure on the nerves ; versions and flexions of the pregnant organ; ovarian irritation from uterine pressure; diseased conditions, as endometritis, cellulitis, endocervicitis, etc., have all been advanced as factors in the production of this irritation. Gastric ulcer, gastritis and various abnormal conditions of the large and small bowel have also been advanced as possible sources of the peripheral irritation.

Dirmoser,[1] as the result of a careful examination of the urine in six cases of hyperemesis gravidarum, comes to the conclusion that intoxication is the cause of the severe symptoms. As to the production of the intoxication,[1] he advances the following elaborate hypothesis :

* Read before the Montreal Medico-Chirurgical Society, Nov. 10, 1898.

"Through the increase in size of the uterus the motor nerves of that organ, the sympathetic and the vagus, are at once mechanically irritated. They, being irritated, bring about respectively contractions of the uterus and of the stomach. Irritation of the vagus increases, however, the secretion of the gastric juice, and also the mucous production, so that the alkaline mucus frequently neutralizes the gastric juice, which is often observed in cases of hyperemesis. These changes form a predisposition to the formation of toxines, which is still more increased by the atony of the whole intestinal tract, which is present in all severe cases." Dirmoser thus considers that the uterine contractions are the result of irritation due to mechanical pressure of the enlarged uterus upon the motor nerves of that organ, and that the contractions so produced are evidently pathological.

I cannot do better than quote verbatim the summary of the present views as to the explanation of vomitus gravidarum which is given in *Progressive Medicine* for September, 1899.[2]

"The possible ways of explaining vomitus gravidarum are: (*a*) Direct vomiting may be produced by an abnormal condition of the vomiting centre, due either to the irritating effects of chemical substances, toxines, etc., circulating in the blood, or to nutritional changes caused by variations in blood pressure in the medulla, or to other circulatory changes. (*b*) Reflex vomiting may be produced by sufficiently powerful impulses sent from the genital tract, causing an irritation of the vomiting centre. (*c*) Vomiting may be produced by a combination of influences affecting the vomiting centre both directly and reflexly. (*d*) The psycopathical factor may be important, as in the vomiting of hysteria.

"We must assume that in two-thirds of all cases of pregnancy there exists an increased irritability of the medullary centre, due wholly or in part to one or both of these two factors: (*a*) Nutritional changes resulting from circulatory disturbances; (*b*) poisoning from toxic elements circulating in the blood. We must further assume that this abnormally irritable vomiting centre is acted upon by afferent impulses sent from one or more of a variety of peripheral sources. Among the most important causes of reflex irritation are an incarcerated retroflexed uterus, abnormal adhesions of the uterus, pathological changes in the uterine wall resulting from endometritis, pelvic congestion, constipation, gastritis, etc. To these sources of afferent impulses we must add the psycopathical or hysterical condition, which is of especial importance in the more serious cases."

A brief consideration at this point of some of the more important conditions which are present in the gravid uterus will make my further remarks more intelligible. Tarnier has said, "All the properties of the

gravid uterus exist in a rudimentary state in the nulliparous woman, and gestation only exalts them." Pajot has expressed this by saying, "Pregnancy does not create any new properties."

The principal properties possessed by the uterus are, sensibility, irritability, and contractility.

The *sensitiveness* of the non-gravid organ to pressure is easily demonstrated in making the bimanual examination. Pain is frequently complained of when the uterine sound is inserted. That this sensitiveness is increased in pregnancy is apparent to any one who has practised abdominal palpitation for diagnosis of the fœtal position. The manual pressure exerted in expressing the placenta frequently gives rise to severe pain. Women occasionally complain of uterine tenderness, especially those cases where the liquor amnii is deficient and the fœtus exerts direct pressure on the uterine wall.

The *irritability* of the uterus is frequently markedly increased as the result of pregnancy. This fact is well known even to the laity, who not infrequently make use of their knowledge to induce abortion by introducing foreign bodies into the vagina to set up powerful uterine contractions.

The *contractility* of the uterus is its most important property. Tarnier and Chantreuil[3] state that the uterus possesses the power of contracting even in a state of vacuity, citing by way of example that it may be noted in certain women at the period of menstruation, especially in cases of dysmenorrhœa. It favors the expulsion of clots and débris and is probably the origin of the severe cramp-like pains so often complained of by women at these periods. They state very strongly that these contractions of the uterus occur at regular intervals throughout the whole period of pregnancy.

Hirst,[4] Davis and others also draw attention to the fact that uterine contractions occur regularly throughout the whole period of pregnancy, and Hirst states that during pregnancy the contractility is always most marked at the menstrual epoch, hence the frequency of abortion at these times. After the fourth month these uterine contractions are manifest in placing the hand upon the abdomen over the fundus. The uterus can be felt hardening under the hand. In the earlier months these contractions can easily be made out by the bimanual method, and are frequently made use of in diagnosing the fact of pregnancy when the uterus is found to be enlarged.

Contractility is more markedly developed in the muscle cells of the body of the uterus, particularly towards the fundus, while it is less pronounced in the cervix. The cervix seems to be in a state of tonic spasm, while the contractions of the uterus are clonic. That this contractility of the uterus is independent of the will and yet capable of be-

ing affected by the emotions, all are aware. Uterine contractions may be set up reflexly by irritation of the breasts, and particularly of the nipples. It is probable that any powerful cutaneous irritation, as the application of heat and cold, may act in the same way.

The nerve-supply of the uterus is derived chiefly from the hypogastric and ovarian plexuses of the sympathetic system. Cohnstein[6] has shown that the uterine ganglia have to a certain extent an independent action, like the cardiac ganglia. There exists, as has been proven repeatedly, a centre in the medulla oblongata which presides over the uterine contraction. Thus the uterus is provided with a nerve apparatus to preside over contraction, very similar to that of the heart.

That uterine contractions occur at more or less regular intervals throughout gestation may then be taken as proven. The question then arises, What is the purpose of these painless rhythmical contractions of the uterus?

It is very probable that by these contractions the uterine circulation is accelerated, and thus the uterus supplements to a certain extent the action of the heart throughout pregnancy. In considering the circulation of the blood in the gravid uterus the thing that probably attracts particular attention is the arrangement of the venous system. The veins, especially in the middle coat of the muscular uterine walls, are simply enormous sinuses whose inner coat alone remains, being in direct contact with the muscle-cells. Thus these uterine veins are converted into large contractile sinuses, in which, no doubt, there must occur considerable retardation of the blood flow.

If I may be permitted, I would for the purpose of illustration compare the gravid uterus to a sponge held in the hand under a flowing faucet. As the sponge becomes filled and distended with water the hand is contracted upon it, and so the sponge is squeezed and emptied more or less of the water it contains according to the force exerted by the hand in squeezing it. When the hand is relaxed, the sponge again fills up, and so on. This, I take it, is very much what takes place in the gravid uterus.

The development of the embryo and its envelopes, as well as the hyperplasia of the uterus and its lining, are accompanied with tremendous chemical changes. It is certainly from the venous sinuses of the placental site that the embryo derives its chief nourishment, and into which its effete material is emptied. The ordinary circulation of the blood through the sinuses to a certain extent provides for change in the supply, but owing to the retardation of the blood-current from the dilatation of these sinuses there must be a certain residuum, which, as

it becomes surcharged with effete material, probably acts in some way as an irritant and stimulates the uterus to contraction and thus to a certain degree the organ may be said to empty itself.

In studying two cases of pregnancy with vomiting which I have attended recently, my attention was arrested by certain phenomena which seemed to me to be explicable only on one hypothesis.

In the first of these cases, a primipara, æt. 40, nausea and salivation occurred throughout the whole period of gestation. At intervals the vomiting was extremely severe, at one period the prostration resulting was so intense as to make it seem probable that the pregnancy would have to be terminated by the induction of abortion. I noticed that the severer attacks of vomiting occurred at certain intervals, which, on questioning the patient, I found corresponded to the menstrual epoch. On one occasion I precipitated a severe attack of vomiting when examining the breasts; on another a vaginal examination produced the same result, though on both occasions the patient had been fairly well for several days previous.

In the second case, also a primipara, the patient complained that her breasts were excessively tender, particularly the left, and on my examining this breast the patient was seized with a severe attack of vomiting. A vaginal examination produced the same result. The uterus was found to be unusually sensitive, and the left ovary was very tender. This patient had previously suffered from dysmenorrhœa, the pain being chiefly located in the left side. While talking with this patient I noticed that the nausea occurred in paroxysms, separated by a considerable interval, in which she said she felt perfectly comfortable. The patient, as long as she was kept quiet, either on a lounge or in bed, rarely vomited, though she still suffered from paroxysms of nausea. She noticed that after walking about the paroxysms occurred more frequently, and very often terminating in retching.

The hypothesis which to my mind affords the best explanation of the phenomena observed in the two cases mentioned is that rhythmical uterine contractions were the primary cause of the reflex irritation which resulted in paroxysmal nausea and vomiting.

In the first case, where the attacks of vomiting were more marked during the menstrual epochs, the uterine contractions were probably accentuated, and at the same time the general nervous tension was exalted, hence the increased severity of the symptoms at these periods. My examinations in both cases acted by increasing the uterine contractions and thus precipitated the paroxysms.

The theory which I wish to advance is that the essential exciting

cause of the nausea and vomiting of pregnancy is frequently the physiological contraction of the muscular fibres of the gravid uterus.

The contractions of the non-gravid uterus which follow the introduction of the uterine sound not infrequently result in reflexly inducing nausea and vomiting. Intra-uterine applications are frequently followed by cramp-like pains, which are associated with nausea and vomiting. In dysmenorrhœa nausea and vomiting sometimes occur, the explanation being that the effort of the uterus to expel clots and débris reflexly irritates the vomiting centre in the medulla. Giles[7] has noted that in the primipara there is a close and constant connection between the sickness of pregnancy and previous dysmenorrhœa. Vomiting is frequently noted in the first stage of labor, and usually occurs at the acme of uterine contraction.

The over-distended bladder, in its effort to contract, not infrequently reflexly induces nausea; similarly the stomach sets up the same reflex. In ileus an analogous reflex action occurs. Appendicular colic is frequently associated with nausea and vomiting.

Thus we see that any hollow viscus in contracting may set up reflex nausea and vomiting.

The fact that the paroxysms of nausea occur most frequently on first assuming the erect position in the morning has led the laity to apply the term "morning sickness" to this condition. It has also been noted that if the patient, before rising, partakes of a light breakfast, the sickness is not so apt to occur.

"Morning sickness" is, I think, susceptible of explanation: There is probably more or less of an accumulation of effete material in the maternal blood in the morning, which leads to increased irritability of the nervous centres. The effect of assuming an erect position is to bring about a determination of blood to the pelvis. This engorgement of the pelvic circulation probably leads to more energetic uterine contraction, which, acting reflexly upon the centre, produces nausea and vomiting. When food is taken before rising it is probable that considerable blood is determined to the stomach, hence less will find its way to the pelvis when the patient stands erect, so that the uterine contractions are apt to be less vigorous than when the patient rises fasting.

It is probable that the beneficial effects of nerve-sedatives in the treatment of this distressing condition are obtained not so much by inhibiting the uterine contractions as by soothing the irritable nervous system and thus controlling the reflex.

I would summarize my conclusions as follows:

1. There exists more or less of a rhythm in the paroxysms of nausea and vomiting in pregnancy.

2. There must also exist a rhythmical exciting cause for these paroxysms.

3. There is a rhythm in the contractions of the uterus which occur throughout pregnancy.

4. The essential exciting cause of the paroxysms of nausea and vomiting of pregnancy, is frequently the physiological contraction of the muscular fibres of the uterus.

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CLINICAL NOTES.

BY

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A Case of Gonorrhœa Rendered Fatal by its Sequelæ.

Upon January 7th, 1892, I was called to treat W. A., a farmer, aged 65 years. The patient was a short, corpulent man with rosaceous nose and cheeks. For years he had been addicted to periodical sprees and promiscuous sexual intercourse. About three weeks before my visit he had been quite disturbed with irritability of the bladder. This irritability had occasioned frequent passages of urine rich in brisk dust deposits. Retention of urine finally developed and for the week preceding my visit the catheter had been used twice daily for the patient's relief. It was noted on January 5th, that the right testicle and epididymis had become swollen and hard.

January 7th. The patient is suffering from severe vesical and testicular pains. His pulse is 100, and temperature registers 102°F. The heart and lungs are normal; the radial arteries are hard but not atheromatous. Palpation of the abdomen reveals only tenderness localized slightly above the pubic symphysis. The scrotum upon the right side is reddened and œdematous, and at its central part is adherent to the anterior face of the enclosed testicle. Fluctuation within the scrotum is not evident. The epididymis is much hardened and enlarged. The same characters of hardness and enlargement can be traced along the lower two-thirds of the anterior face and outer border of the right testicle.

The urine withdrawn by catheter is alkaline in reaction, possesses an ammoniacal odour, and contains deposits of ammonio-magnesium phosphates, pus, and thick mucus. By firmly passing my finger along the under surface of the penis I expressed nearly half a teaspoonful of creamy pus from the meatus.

Treatment.—Catheterization of the bladder night and morning followed by irrigation of the bladder and urethra with a solution of boric acid, 80 grains to the ounce. Internal administration of boric acid, 5 grains, in copious draughts of water every three hours, and sulphate of quinine, 3 grains, and whiskey, ½ ounce three times a day; thorough purgation and a milk diet.

January 9th. General condition unchanged. Urine freer of pus and mucus, but still not clear. Pus not so plentifully squeezed from the urethra. Scrotal œdema over the affected testicle more developed than upon the 7th instant.

An incision was made through the scrotum into the anterior face of the right testicle; this resulted in the liberation of a teaspoonful of thick pus. The pus had destroyed the internal structure of the testicle. The epididymis is intact but much enlarged and hardened. The abscess cavity was packed with iodoform gauze after thorough cleansing with solution of hydrogen peroxide; entire scrotum dressed with sterilized gauze and cotton. General treatment continued unchanged.

January 11th and 12th. Conditions unchanged. Testicular wound dressed, pus cheesy.

January 13th. Patient to-day experiences severe pains running from the hypogastric region upwards and backwards to the lumbar region of either side. The urine is quite thick with pus and mucus and gives off a nearly fetid odour; its quantity is lessened. Temperature 103°F., pulse 120, with lowered tension and diminished volume. The patient is drowsy and complains of headache. It is evident that a double pyelitis has been established within the past twenty-four hours and that uræmia is developing. Brisk purgation with continuation of the boric acid was kept up with the addition of ten minums of the tincture of digitalis every two hours and systematic catheterization and irrigation.

January 14th. Patient became comatose during the night. He lies with contracted pupils and fallen jaw and breathes rhythmically and deeply. The urine contains rather more albumin than the amount of pus contained in it would account for.

The uræmic stupor lasted five days during which it was only possible to apply the hot pack night and morning, to administer digitalis and water in small amounts at frequent intervals, and to systematically catheterize and irrigate.

January 19th. The patient was gradually awakened from his deep stupor; he is now quite conscious. The urine has increased in quantity and is free from pus and mucus; its fetid odour has disappeared.

From January 19th to January 26th, the patient progressed well. His mind was clear, he experienced a keen appetite, passed his urine without aid and felt hopeful of recovery.

January 26th. Patient complains of severe pains in ankle, elbow, and finger joints of both sides. All these painful joints are red and swollen. The temperature, which during the past few days has been normal, has risen to 103°F., and the mitral valve, heretofore normal, is insufficient. Along the left border of the sternum, above, below, and over the fourth rib, a pericardial friction murmur is heard.

Sodium salicylate and potassium bicarbonate were given alternately every three hours and tincture of iron chloride three times a day.

At the end of twelve days the polyarthritis and pericardial friction murmur had subsided, but the physical signs of mitral insufficiency and

moderate dilatation of the left heart remained. The affected joints were quite swollen and stiff. In both knee joints a moderate effusion was, I am sure, present for nearly a week after the disappearance of the acute symptoms.

February 15th. A daily examination of the lungs has revealed no unnatural change, except lessened intensity of respiratory sounds, till to-day. Now there is present consolidation of the bases of both lungs, a condition evidenced from the spinal column to the posterior axillary line of either side.

February 16th. Two small areas of pulmonary solidification detected in mid-axillary region of either side; other physical signs not changed.

February 18th. Patient is dyspnœic. Physical signs of chest unchanged, except the development of flat percussion, noted in five limited areas, two below the right scapula, one below the left scapula and one in either mid-axillary region.

February 19th. Circumscribed areas giving flat percussion note aspirated to-day. Each area contributed a tablespoonful of straw-coloured serum flaked with small shreds of fibrin. Dyspnœa relieved by operation.

The patient gradually improved until April, 1892, when his legs became œdematous and his heart presented increased enlargement to the left. The mitral regurgitant murmur was intensified.

These conditions were treated upon well advocated principles, but it was not until the following June that the patient with swollen legs and palpitating heart was able to walk about. By the last of the next July he felt so much better that he was able to drive a horse-rake, but in the middle of August, dyspnœa and palpitation became most intense.

I visited him on August 26th. He sat in a chair with his hands pressed to his temples and continually exclaimed, "My head! Oh! the pain." I was positive from symptoms of pain under such circumstances as related to the patient, that either an embolus or detached vegetation from the mitral valve had lodged in the middle cerebral artery, but there was no objective sign of lesion, such as unequal pupils or paralytic state, to support this view. Morphine relieved the pain.

Upon September 1st, the patient experienced another attack of severe pain, then he lost consciousness and died on September 2nd. I did not see him during the last attack.

The following propositions support my belief as to the gonorrhœal nature of the case.

(1) The evident presence of pus in the urethra, as shown by the readiness with which it could be squeezed away by pressure upon the under surface of the penis.

(2) The probability of the first days of irritability of the bladder be-

ing occupied in the development of the initial stage of a specific urethritis.

(3) The time at which the orchitic developments took place.

(4) The arthritic and cardiac phenomena.

(5) The patient's known intimacy with his servant girl, who had been treated for gonorrhœa a few weeks before the onset of the patient's urethral and vesical symptoms.

The case is important for two reasons. First, it unfolds a most interesting system of regular morbid developments; second, it illustrates the dangerous characters a clap may assume.

Note.—One year after treating the foregoing case I visited a gentleman who had been taken ill three days before my arrival. He had been seized with chills, severe pains in the chest and a general aching of the body. At the time of my visit the patient complained of pain situated half an inch to the left of the nipple. The pain, although sharp and stitch-like, was continuous. It was rendered most acute by deep inspiration. The temperature registered 104°F. The patient was at times markedly delirious.

Auscultation over the point of pain revealed a to-and-fro friction murmur that was continuous when the patient ceased breathing and slightly intensified by a quite deep respiration. In making a general examination of the case I observed that the patient's penis was carefully wrapped in cotton, and then learned that he was in the purulent stage of an acute clap. I also ascertained that four days before the onset of the chest symptoms (pleuro-pericarditis) he had been catheterized.

It is now six years since this patient was afflicted with his pleuro-pericarditis, but his medical attendant tells me that to this day the patient complains of frequent stitch pains in the region of the left nipple and that his left knee joint is partially anchylosed. In all cases of acute pleuritis or acute pericarditis it might be well to investigate the condition of the urethra or vagina.

A Case of Death during Chloroform Anæsthesia.

G. A. B., aged 47 years, had been the subject of chronic hip disease for 43 years. When four years old he fell from a fence and, he told me, dislocated the head of his right thigh-bone upwards and backwards upon the corresponding ilium. He further stated that no reduction of the dislocation was made and that he suffered during many years of invalidism. Finally, fixation of the head of the thigh-bone in its abnormal position developed, and, till within one year of his death, he had experienced no inconvenience save that arising from lameness and occasional pain in the region of the displaced femoral head.

In March, 1890, intense pain in the head of the femur and œdema in

the tissues surrounding it, occurred. The patient refused an operation for his relief in May, and did not consent to be surgically treated until the succeeding May. At that time he was much reduced in flesh, his blood was thin, and he was extremely weak. Fluctuation was marked over the whole outer face of the right ilium. The operation it was intended to make included only incision and drainage to let away accumulated pus.

The patient was given a preliminary drink of strong brandy. He was then placed upon a level table with his head and neck slightly elevated. The inhaler consisted of a very fine cambric handkerchief and the anæsthetic—chloroform—was dropped upon it from an air-displacing glass bottle. The method of giving the chloroform I aimed at was this: drop by drop, until a moderate cumulative effect was obtained. But during the stage marked ii. I at one time permitted half a teaspoonful to fall upon the handkerchief.

Symptoms pertaining to chloroform anæsthesia in this case.

(i) The patient eagerly inhaled the chloroform vapour for a few seconds and proclaimed himself anxious to be relieved of all pain. The pulse assumed slightly greater volume and tension and slowed from 110 to 80. After two to four minutes the respirations became rapid and to a slight extent sterterous. The anæsthetic was then withdrawn and partial consciousness almost immediately returned.

(ii) During the short period of unconsciousness the operator found it impossible to drive his bistoury through the soddened tissues; a more liberal dropping of chloroform was then made and anæsthesia became quickly profound. The pulse showed excellent characteristics in volume, tension and rhythm. Withdrawing the handkerchief from before the patient's face, I turned to assist the operator. Suddenly the respirations became deep, sterterous and rapid, and then ceased.

I examined the right radial artery and observed the pulse beating more rapidly than it had been and with greatly lessened volume. Presently it stopped. The usual methods of resuscitation were employed for a considerable time, but they were without effect. The patient was dead.

Tuberculous Osteo-Myelitis of Terminal Phlanx of Index Finger Succeeded by Tuberculous Invasion of the Lungs.

Lizzie C., aged 23 years, a moderately plump girl, five feet eight inches in height, consulted me in March, 1890, for the relief of a felon involving the terminal phalanx of the left index finger. The tissues of the end of the finger were infiltrated and œdematous, reddened towards the hand and pale and dead-looking towards the extremity. Anteriorly, on the palmar surface of the pulp, there existed a perforation of the

tissues round which masses of cord-like material protruded from within the finger, and from which pus and remnants of broken-down tissues constantly passed away. By means of the probe it was ascertained that only a thin shell of bone consisting of the dorsum of the phalanx remained. I amputated the finger above the terminal joint and healing was uninterrupted.

During the succeeding four months the patient became much debilitated; she lost appetite and flesh. In August she was prostrated by an attack of bronchitis involving the tubes, large, medium-sized and small, over all regions of the chest. No consolidation existed in the lungs, but the patient was markedly cyanosed. Her pulse was not unduly rapid and her temperature throughout the course of the disease never exceeded 103°F. She was considerably emaciated and expectorated pus. Microscopical examination of her stained sputa revealed the presence of tubercle bacilli, in number three to each mounting, with giant cells, ephithelial cells and small round cells. The patient recovered from the acute symptoms in three weeks, and in 1893, weighed 154 pounds.

The cause of the osteo-myelitis was given as trauma. In September, 1899, the patient's sister died of pulmonary phthisis that exhibited its first signs of development in the preceding February.

A Case of Fatal Hæmatemesis.

Upon the morning of January 8, 1894, I visited J. B., a short slender boy, fifteen years of age. For a week the patient had been ill of fever, a sense of profound weakness and pains involving the muscles of his shoulders, arms, thighs and legs. The urine was voided in quantities of one ounce every six hours and contained a dense deposit of uric acid and urates equal in bulk to twenty-five per cent. of the urine. It was observed after solution of the urates by heat that an opaque urine remained which was cleared by the addition of one drop of strong nitric acid. The patient lay easily upon his bed and turned from side to side without pain. He was slightly anæmic and his flesh somewhat reduced. The heart and lungs were normal, anæmia being expressed by a blowing murmur, systolic in time and low in pitch, heard over the base of the heart. Pulse 90, weak; temperature, 101°F.

Symptoms.—An occasional light pain occurred in the epigastric region from time to time and subsided after a few minutes. The bowels had already freely responded to the action of Epsom salts. The passage of urine was succeeded by urethral burning. The tongue was firmly protruded and was moist. Over its dorsum existed a whitish coating stained green in patches.

The abdomen was tympanitic to the degree usually associated with the loss of food supply induced by anorexia. This sign revealed nothing

distinctive of internal lesion. The skin of the arms and legs presented a few markings in bluish green and yellowish green,—markings suggestive of purpura.

The patient was given potassium bicarbonate (gr. v., in half a glass of water every two hours), a tablespoonful of milk every two hours, and lemonade freely.

January 9th, 9 a.m. Temperature, 99°F., pulse very weak. Large firm coagulæ of milk have been vomited several times. Their formation may be attributable to the lemonade drunk during the past night. The urinary output has increased to double the quantity voided yesterday. Treatment unchanged, except withdrawal of lemonade.

7 p.m. Sudden severe abdominal pain and pain referred to the glans penis associated with temporary urinary retention, developed one hour ago. One half hour later large quantities of coagulated and liquid blood were vomited.

8 p.m. The abdominal muscles are rigid and tympanites is fast developing.

9.30 p.m. The pulse grows fainter, the lips are becoming pale and the breath is short and quick. Mouthfuls of blood are spat up at intervals of but a few minutes. The hæmorrhage progressed until a fatal termination was reached at 5 a.m., January 10th. The amount of blood vomited measured one quart.

This case probably illustrates perforation of a gastric ulcer whose presence I failed to recognize. The rapid growth of the abdominal symptoms points to the occurrence of an acute peritonitis. After the death of the patient I was told that he had been subject for the past six months to periodical attacks of sick stomach and one-sided headaches that were usually completely relieved by the administration of Epsom salts.

A CASE OF RUPTURE OF THE RECTUM; OPERATION; RECOVERY.

BY

FRANK R. ENGLAND, M.D., Surgeon to the Western Hospital.

The case which I wish to bring before you to-night is, I think, sufficiently unusual to be worthy of record. The history is as follows :—

G. S., a rather delicate little girl, aged twelve years, living in the country (nine miles from a railway station and seventy miles from Montreal), while skipping and jumping fell off a piano box upon a broom-handle which happened to be leaning against the box. The end of the handle entered the anus and penetrated the body to the extent of from twelve to fifteen inches. The child succeeded with some difficulty in withdrawing the broom and made her way to the house near by. Dr. Yeats, of Dunham, whom I have to thank for the case, saw the patient about three or four hours after the accident. He noted that there was at that time some shock and pain, but not external evidence of hæmorrhage. A few hours later, however, a large quantity of blood escaped from the rectum accompanied by marked signs of weakness. Dr. Cotton, of Cowansville, was called in consultation and it was decided to send the patient into town.

I first saw the case at the station on arrival of the train, 26 hours after the accident. Her condition was most unpromising. The face blanched and pinched; extremities cold; pulse small, weak and rapid; temperature 101°F. There was also general abdominal tenderness with fixation of the abdominal muscles, but there was no distention. There had been pain, though not of a severe character, and some vomiting; much loss of blood also was said to have occurred during the journey to town. The patient was transferred to the Western Hospital and without further delay anæsthetised.

On inspection the anus was found bruised and patulous and the surrounding skin ecchymosed. On digital examination (per anum) a large rent was discovered in the rectum situated about three inches from the anal orifice and through this opening the finger readily passed into the peritoneal cavity. The rectum, which was filled with fluid and clotted blood, was emptied and cleansed and the edges of the torn bowel were seized with dressing forceps and a spouting vessel caught and ligated. After temporarily packing the rent with iodoform gauze the patient was placed in the Trendelenburg position and the abdomen opened by the usual median incision. A considerable quantity of

* Read before the Montreal Medico-Chirurgical Society, Nov. 11, 1899.

grumous material found among the coils of small intestine and in the pelvis was sponged away. Undoubted evidence of a commencing peritonitis was to be seen. A couple of loops of intestine presented a bruised appearance and were covered with a sloughy looking exudate. The rectal tear was easily located by means of the projecting gauze. It was situated low in the pelvis, behind and somewhat to the left of the uterus, and measured from 1½ to 2 inches in length. To close it two rows of sutures were used; the first row consisted of one continuous suture; the second of a number of mattrass Lembert sutures. Before closing the abdominal wound the pelvic cavity and exposed coils of small intestine were carefully sponged with 1 to 10,000 bichloride solution and a glass drainage tube inserted.

During the operation the patient's condition was exceedingly grave, necessitating hypodermics of brandy and strychnine and subcutaneous infiltration of normal salt solution, of which a pint was introduced beneath the breasts and below the axillæ. After the operation the patient was kept for two hours on the table in the Trendelenburg position surrounded by blankets and hot water bottles. The pulse, though very small and rapid, was still perceptible. For three days, stimulants, heart tonics and nutrient enemata were persistently employed. The pulse remained rapid and small for some time. At 4 p.m. on the second day the temperature rose to 101 3-5°F., but fell to 98.5° on the following day and subsequently remained practically normal. On the fourth day the drainage tube was removed and gauze packing was then used. Pus escaped for some time, gradually lessening until the sinus closed five weeks after operation. Convalescence, owing to the patient's greatly lowered condition, was necessarily slow; nevertheless it was uninterrupted and recovery was complete. The bowels acted regularly from the first; the rectum received no local treatment but beta-naphthol was administered for a time as an intestinal antiseptic.

Remarks: Erichsen in his valuable work on "The Science and Art of Surgery," Vol. I., page 840, says: "When a foreign body such as a stick or a broom-handle or the leg of a chair is thrust forcibly up the rectum by a person falling on it, two dangers may result—external laceration of the sphincter ani and the perineum with hæmorrhage, or transfixion of the gut and wound of the periteum with consecutive inflammation of that membrane, which almost invariably terminates fatally." He further cites a remarkable case which occurred in his own practice where a cedar pencil five inches long and cut to a point was forced by the patient, a young woman, through the posterior wall of the vagina into the abdominal cavity. Here it transfixed two coils of small intestine, and after being fixed there for eight months Erichsen extracted it by an incision through the anterior abdominal wall, midway between the umbilicus and Poupart's ligament, where its point was engaged in the fascia transversalis. It had occasioned repeated attacks of peritonitis, and after extraction death resulted from that cause.

MEDICO-LEGAL CASES.

BY

GEORGES VILLENEUVE, M.D.,

Associate Professor of Medical Jurisprudence and Mental Diseases, Laval University; Medical Superintendent, St. Jean de Dieu Asylum, Longue Pointe, Que.

Offense against Morals, Allegations of Irresponsibility on Account of Insanity and Epilepsy set as a Defence, Disproved by Medical Examination; Condemnation.

Last May I received instructions from the Police Magistrate to make an examination of the mental condition of H. C., confectioner, a Belgian by birth, accused of having publicly offered for sale three images tending to corrupt morals and contained in a box. This offence comes under Article 179 of the Criminal Code, which renders the guilty party liable to two years imprisonment. These images, of an obscene nature by reason of the predominance given the genital organs, were made of colored candy and presented a naked woman and a naked man with a dog. A picture of the Infant Jesus, carrying a cross, was pasted on the box. The trial disclosed the circumstances under which the offence had been committed. The defendant had brought this box to a hotel-keeper, telling him to deliver it to a man named S. who lived in the house and to claim the sum of twenty-five cents, the price agreed upon for the box, and that he, himself, would come afterwards to collect it. The hotel-keeper opened the box, which was not wrapped up. On seeing its contents, whose intentional obscene character was only too apparent, he caused a police official to be called, to whom he gave a description of H. C. This officer went to his residence and entered into a conversation with him, under the pretence of procuring a similar box for himself. H. C. hesitated at first, alleging that this kind of business was very dangerous in this country on account of the severity of the laws; that it was not the same in his country where he had only to make similar boxes to make money for himself when he needed any. He finally consented to make the same kind of a box, for a stipulated price. Thereupon, the officer placed him under arrest and brought him before the magistrate. H. C. was identified by the hotel-keeper as the individual who had delivered the box to him.

At the trial H. C. pretended that he remembered nothing and protested his innocence. His brother asserted that some of the family had been insane and that the defendant himself was not always in his proper senses and his wife stated that he had sometimes lost conscious-

ness, and she seemed to wish to attribute to epilepsy the offence of which her husband was accused. In the presence of these allegations, the defendant was, at the request of the consul of his country, granted a medical examination.

In the present case, we have then to ask ourselves the following questions :—

(1) Could the defendant in a general way be considered insane ?

(2) Was he afflicted with epilepsy and, if so, was it while under the influence of this nervous disorder that he had committed the act for which he was called to account ?

We have sought the answer to these two questions in a personal examination of the accused and in a study of his history and hereditary antecedents. We obtained the latter from the accused himself and from his brother, and, although it has not been possible for us to test the correctness of their information on account of the great distance, still we think that it may be accepted as true.

H. C. has been living in this country for three years; he is a fancy pastry maker by occupation, forty-two years of age, twenty years married, and the father of two children aged respectively 10 and 17 years.

His father, an army officer, was a hard drinker and died suddenly. His mother died of pulmonary phthisis. One of his sisters has been an inmate of an asylum for fourteen years. She became insane in consequence of family troubles. Another sister is of a highly nervous temperament. She has had some nervous attacks, the nature of which it is impossible to determine with precision from lack of sufficient details. The brother, whom we saw, is perfectly sound, intelligent, and enjoys an excellent reputation.

H. C. has irregular features, is of medium height, and not over vigorous. He does not indulge in strong drinks immoderately. H. C. presents nothing out of the ordinary in his appearance and his bearing, but his countenance was visibly embarrassed when he appeared in our presence. His conversation is coherent and rational; he understands the meaning of all the questions and answers them correctly. His memory is generally good. The exactness of the information communicated by him with regard to his family and himself was corroborated by the narrative which his wife and his brother subsequently gave us. He declared most earnestly that he was not accountable. He seemed to understand the benefit to be derived from his hereditary antecedents, of his having at times lost consciousness, and he set forth the importance thereof with a certain degree of cleverness. In the course of the visits which we paid him in the Montreal jail, we discovered in him neither excitement nor depression, neither delusions nor hallucination, in a word, no mental disorder, whatsoever, and it does not appear from

the examination to which we subjected him that he ever had had any.

In our presence H. C. maintained the same attitude that he took before the tribunal, that is to say, that he remembered nothing. But it was comparatively easy, by questions put unawares in the course of the examination with regard to the various phases of the offence, to obtain from him answers, which, taken together, made a narrative in every respect agreeing with the facts related at the preliminary examination. He even acknowledged to us that he had made the box at the request of S. and that it was not the first he had made for him. We may, as a consequence affirm that the amnesia of H. C. was feigned. Our inquiries on the subject of his insanity have then ended in the negative. We discovered in H. C. no symptoms which could warrant us in assuming that he is afflicted with insanity. His intelligence is sufficiently developed and is in no wise perverted. I questioned his wife and his brother; they reported of him no act nor sign of insanity. His wife said that his manner of living had been regular and his sexual life normal. His brother asserted that he was obstinate, vain and proud. These, however, are anomalies of character which cannot be compared to symptoms of lunacy. In answer, therefore, to the first question, we may assert that H. C. cannot be considered a lunatic, that he is sufficiently intelligent to appreciate the nature of his acts and that he is in the free exercise of his will.

It remains for us now to elucidate the question which refers to epilepsy.

In order that a person may be declared unaccountable on the plea of epilepsy, it seems to us that it ought to be proved :—

(1) That he is afflicted with epilepsy.

(2) That the criminal act bears a direct relation to a fit of epilepsy, under some one of its forms.

(3) That the act shows the characteristics which accompany epileptic phenomena.

(4) Or, that epilepsy has impressed on the intelligence or character permanent modifications.

During his detention of over a month H. C. had no nervous attack.

Previous to that time, the information is limited to three vague facts, the details of which are completely wanting. Once he fell whilst going downstairs with a lamp in his hand. At another time his wife found him in his shop stretched on the ground, apparently sleeping; and the third time, he was carried to the house by persons who informed his wife that they had picked him up from the ground just as he had lost consciousness. Not once during his twenty years of married life had his wife remarked in him any convulsive phenemenon, nor anything approaching vertigo or absent-mindedness, nor had she

noticed anything which would indicate that he had suffered from nocturnal epilepsy. Even admitting as real his having lost consciousness sometimes, still we are not permitted to assert, in the absence of details about the phenomena which accompanied them, that they were of an epileptic nature. Three facts of an indefinite nature occurring during the life of a man forty-two years of age, may, at the utmost, allow an interrogation point to be placed but do not authorize us in any wise to admit that H. C. was troubled with epilepsy. On the day the crime was committed, his wife remarked nothing in him which was not customary.

In the absence of proof of the existence and reality of the disease, we may look further to find out if the act has the characteristics of an epileptic phenomenon. The principal manifestations of epilepsy, no matter what may be its nature, are characterized by their suddenness, the unconsciousness that accompanies and the amnesia that follows them. "They are acts, abrupt, sudden and unpremeditated, performed without motive, of which their author is not conscious and retains no remembrance, or at least only a very confused one." (Vallon).

A study of the circumstances under which the act was committed enables us to affirm, by the absence of these characteristics, that it cannot be a question here of an act which can be traced to an epileptic nervous disorder. We find here, in fact, a premeditated act, performed for profit, with all the appearances of sanity, with an idea even of its gravity and the recollection of which, in spite of his denials, has been retained. It was also only a repetition of identical acts having the same motive, namely, exploiting the lewdness of others for pecuniary gain. This business was known to his brother who had sought to dissuade him from it. "I told him that it would end with his being caught," he let slip in our presence.

Then, even if it could be presumed that H. C. is an epileptic, the act which he committed has not the characteristics of an epileptic phenomenon and cannot consequently be attributed to that nervous disorder.

The defendant appealed to his hereditary tendencies. The brother whom we have seen is a perfectly sound man. The defendant seems to differ from him only in some anomalies of character and in his moral disposition. It seems, therefore, that hereditary influence cannot be called into account in this case, only theoretically, in favor of a modification of his responsibility, insanity and epilepsy having been entirely laid aside.

Conclusions:—(1) H. C. is not a lunatic. (2) The crime of which he stands accused is not a pathological act, born of an irresistable impulse or disease nor was it inspired by insane motives. It reveals such motives as are to be found among the ordinary factors in the causality of criminal acts, namely, inordinate desire for gain.

II.

Mere Mental Weakness Associated with an Entire Absence of Moral Sense; Two Previous Convictions Followed by Imprisonment in the Jail and in the Penitentiary; Another Arrest with Medical Examination and Subsequent Commitment to a Lunatic Asylum.

E. L. was brought before the Police Court accused of having stolen a certain sum of money from his employer. When questioned, he acknowledged having appropriated this sum, but, by way of justification, he alleged reasons which the judge was unable to recognize as emanating from a sound mind. The Magistrate ordered, therefore, an examination to be made of his mental condition, which was entrusted to me. E. L. had already a criminal record and has several different sentences as follows:—October 5th, 1888, reform school, five years for robbery; May 25th, 1894, six months in jail for robbery; August 4th, 1896, penitentiary, three years for burglary.

E. L. is of medium height, well formed and vigorous. With the exception of the uncommon size of his ear-lobes, he presents no very striking deformity. He does not know how to read or write, but knows how to calculate a little. His memory has acquired a certain degree of development; he gave information about his life, not very full, it is true—for he is not prolix—but nevertheless exact. However, it was only after several interviews that I was able to make him give a complete narrative. He understands the meaning of the questions and answers them with exactness. His conversation is coherent, but it may be said with truth, that he does not shine by reason of his intellectual quickness, nor by the extent of the circle of his ideas, which is, on the contrary, very narrow. His mental deficiency manifests itself particularly with regard to the so-called higher faculties. He does not possess the power of synthesis, reasoning, generalizing and especially that of judging, which as regards the moral aspect of his actions, is marked with the most absolute defectiveness. He is entirely lacking in the power of adaptability to the various circumstances of life, and moral sense is totally wanting. He reasons about the misdemeanors he has committed as if he had never acquired the least idea of morality. It is evident, in his case, that the dulling of the intellectual development, which is congenital, has affected the moral sense and the so-called higher intellectual faculties more than those of the lower order. (Magnan). Were it not for this absence of the moral sense and the want of adaptability, he could perhaps have applied in a normal way to practical purposes his limited intellectual power and led a useful life, however lacking in brilliancy it might have been.

Considered just as we find him, we may assert with truth in the words

and meaning of the statute that E. L. labored under natural imbecility or disease of the mind to such an extent as to render him incapable of appreciating the nature and quality of the act and of knowing that such act was wrong and, hence, that he is unaccountable both from a legal and medical standpoint. This conclusion was accepted by the court and E. L. was committed to the asylum.

We thought that it would be interesting to know the opinion of the directors of the institutions where E. L. had been incarcerated, and we received the following correspondence from them.

The Director of the Reform School wrote to us as follows:—

"We have had among our youthful delinquents a boy named E. L. He was in our school from October 5th, 1888, to October 5th, 1893, and he learned the tinsmith's trade; but it was impossible to teach it to him properly or to reform his character on account of the weakness of his mind. His companions considered him demented and were very much on their guard against him, on account of his strange manner of acting and his violence in his moments of anger. He was twelve years old when condemned; he had not made his first communion and as an evident characteristic mark, he was noted "simple." He had attended school three years, but neither knew how to read nor write. The young man was condemned for stealing tobacco."

We are indebted to the courtesy of the Prefect of the penitentiary for the following information. "E. L. served almost three years imprisonment in the penitentiary. As you remarked he is a simple-minded person who is approaching a state of complete imbecility. It was almost impossible to make him understand and follow the regulations of the institution. Before my arrival he was nearly continually in the punishment cells, dungeon, etc., for infraction of the rules. Having found out to a certainty his mental condition, I treated him accordingly. He was very stubborn, but not wicked. In my opinion he would be better in the asylum than in the penitentiary."

It would seem that this unfortunate young man must be added to the already long list of unrecognized and condemned lunatics who have undergone their penalty to the full extent. It is owing to the keen intelligence and to the humane feelings of the cautious magistrate before whom he last appeared, that he escaped another condemnation.

TWO CASES OF AUDITORY PERIPHERIC HALLUCINATIONS.

BY

E. P. CHAGNON, M.D.

I have observed at the St. Jean de Dieu Asylum, two men afflicted with hallucinations of the sense of hearing, who, I think, may prove interesting on account of the causes which excited these hallucinations.

CASE I. G—, is thirty-two (32) years old, a laborer. His father died of "dropsy." Besides this, there is nothing worthy of note in his family history.

During his entire life, G—has been afflicted with aboulia. For example, he got married at twenty-five years of age, very much against his will, so he says. At every visit he paid the woman whom he was courting, he resolved to refuse to accept the offer of marriage "she made him;" but each time he was unable to find the necessary will-power to reject her suit. At the foot of the altar he cherished the hope of being able to say "No," but in vain; for in the presence of the priest, he said "*Yes.*" One day, being in need of gloves, he decided to devote seventy-five cents towards their purchase. The store-keeper to whom he applied showed him a pair which sold at the high price of four dollars, and he bought them, again unwillingly. Up to the time of his entering the asylum, his life was thus replete with actions stamped with aboulia.

Admitted into the St. Jean de Dieu Asylum, September 8th, 1898, G— manifests hallucinations of the sense of hearing only when he hears a noise of any kind, or a sound, or when he experiences an impression through the sense of touch. If he is resting, and his companions are walking in his neighborhood, he immediately hears voices, apparently coming from their feet, and if he himself gets up and walks, voices in like manner seem to issue from his own. In fact, voices seem to proceed from everybody's feet when they come in contact with the ground with a noise either soft or loud. The noise of water poured into a glass causes the hallucination. I rumple a paper, the noise says to him, "You are a — fool." I strike the iron armature of an ink-stand with my pencil, with metallic voice there comes to him "you are a simpleton;" if he scratches himself, he feels a sensation that awakens the voices.

Case II. M—, twenty-six years old, unmarried, a farmer, was admitted to the asylum, May 25th, 1899.

His maternal grandmother and grand-uncle died demented. One of his uncles is a victim of alcohol.

M— shows but slight intelligence. As in the case of G—, his hallucinations of the faculty of hearing are only produced by noises or sounds. They are produced whenever his companions or he himself begins to walk. There is, however, this distinction which he makes, that whilst the voices that reach him from his own boots speak to him musically, those from others are dicordant.

The man who was the subject of the first observation returned to his home cured in December of the same year, after a three months treatment in the asylum. He has been seen again since that time. He has his pockets stuffed with medicinal powders and bottles of medicine having developed into a hypochondriac.

The other patient has also just been discharged from the asylum, slightly improved.

What I point out particularly in these two cases, each of whom presents a pathological past, is that it is absolutely necessary for them to undergo an impression either upon the sense of hearing or of touch to experience auditory hallucinations; no noises, no voices. If everything is quiet, they have no hallucination whatever.

NOTES FROM PRACTICE IN THE ARGENTINE REPUBLIC.

BY

F. G. CORBIN, M.D., (McGill, '90) Mendoza, Argentine Republic.

(CONCLUDED)

Myiasis Narium—Maggots in the Nose.

The following cases, rare even in this semitropical climate will probably be of interest as I find none of the kind reported in the *Lancet* during the last twenty-five years and in the ordinary English text-books, this condition is not mentioned.

On the morning of January 28th, 1896, I was called to assist the foreman of Milani and Company's jerked beef factory, J. B., an Italian, forty years of age. I found him complaining of intense pain in the right ear and right parotid region.

On examination I found only a slight redness and fulness of the tonsil and soft palate on that side. There was no discharge from the nose or ear or swelling of the face at this time. I had no instruments with me for making an examination of the ear or posterior nares, so without making a definite diagnosis, I gave him half a grain of morphine hypodermically and left him. The following morning they told me by telephone that he was much worse, not having slept and then suffering very great pain. I advised sending him into the hospital at Chascomus, where I saw him at 10 a.m.

His face was now swollen on the right side and on examination I discovered something moving on the floor or the right nasal cavity, about two-thirds of the way back. With a pair of forceps I removed a maggot of a whitish yellow colour about half an inch long, smaller towards the head than behind, without feet, segmented, and with a small dark spot, nearly black, near the posterior extremity. On searching my library I found that this maggot corresponded to the larva of the *Lucilia hominivorax*, a kind of bluebottle fly. Beyond this fact, which I discovered in a French medical encyclopædia, I could find nothing, and being ignorant of the experience of others, I began the treatment of the case on general principles ordering a nasal douche of bichloride of mercury, 1 to 2000, followed by insufflations of calomel and iodoform in equal parts. My colleagues, all native doctors, were in the same boat as myself, not one of them having seen the disease before or having a description of it in their libraries.

The following morning, January 30th, on going to the hospital, my patient complained of being unable to breathe through his nose and

the nurses informed me that the solution would not pass. I found the cause to be a living mass of larvæ and began to take them out with forceps. After clearing out a few the man blew his nose and out came from forty to fifty maggots mixed with a very foul and bloody muco-pus. Although from the first moment of the treatment maggots continued to come away the pain was not fully relieved until this large number was removed. The man had suffered terribly, morphia and chloral having no effect upon the pain.

On the afternoon of this same day, for the benefit of a colleague who had expressed a desire to see the maggots, I ordered the nurse to put a couple in alcohol and about an hour after called at his house. Much to our surprise both worms were still living and wriggling at the bottom of the corked bottle. At my request my medical friend saw the patient with me the next morning as his condition was far from satisfactory. At our visit we found the temperature 103° F., pulse 120, and the man looking very badly. On the soft palate, extending from its junction with the hard palate to a point a little to the right of the uvula and to about a quarter of an inch above its base, a white exudation had appeared. My colleague pronounced the condition to be diphtheria in spite of the maggots, and although I did not agree with him, the patient was placed at once in a private ward. The symptoms were very like those of diphtheria, if we except the presence of the maggots, and one could not be blamed for mistaking the two conditions, the exudation having exactly the same appearance as that of diphtheria. My friend agreed with me regarding treatment and the antiseptic solutions were continued while I ordered quinine and bitters for the constitutional symptoms. Owing to purging and slight salivation I changed the mercurial preparations, camphorated naphthol as a paint and carbolic acid, 1 to 40, for the douche. With forceps I removed without any difficulty the afore-mentioned membrane which was lozenge shaped, one inch wide by two long, thick, glairy, tough, and of a dirty, pearly white colour. During the afternoon the patient spat out another bit of the same size and character from the same place. The mucous membrane beneath was raw and bleeding.

On February 1st, the soft palate had sloughed leaving an aperture about the size of the above mentioned membrane and through this opening another lot of larvæ made their way.

My discovery of January 30th made me rather curious to know how long these larvæ would live in the different antiseptic solutions in general use and by experimenting I obtained the following results :—

Bichloride of mercury, 1 to 2000, movement ceased in 105 mins.

Bichloride of mercury, 1 to 1000, movement ceased in 60 mins.

Carbolic acid, 1 to 40, movement ceased in 110 mins.

Carbolic acid, 1 to 20, movement ceased in 70 mins.

Alcohol (spiritus vini rect.), movement ceased in 95 mins.

On seeing these results I became rather astounded and doubtful as to the outcome of my treatment; still, from this date to February 15th, my patient did well. He had slight fever, no pain, and was getting rid of from one to six maggots per day.

On February 6th I received from a medical friend in Buenos Ayres Dr. Morrell Mackenzie's work on Diseases of the Throat and Nose, Vol. II. Here I found this disease described and inhalations and injections of pure or diluted chloroform into the nasal fossæ recommended as treatment.

As my patient was doing well and there appeared to be no more maggots, I did not use chloroform in this case except to try its effect upon two maggots which came away on February 8th. In pure chloroform one ceased moving in one minute while the other in chloroform vapour kept moving for three minutes.

The last maggot, as I thought, having come away on February 8th, on February 11th I put four wire sutures in the cleft palate and drew it together. Although there was still some ulceration I did this operation at this time on account of the great difficulty the man had in swallowing, speaking and breathing, for, owing to the loss and laxness of the tissues, the uvula hung down so low as every now and then to get under the epiglottis causing coughing, while all his food had to be given by a stomach tube. This was very unpleasant and at the same time did not allow him to take sufficient nourishment. The operation, owing to what followed, was not a complete success, but it lifted the uvula and made the opening very much smaller for a subsequent operation done on March 5th.

On February 13th the patient complained of pain and said he thought that he felt something behind his right tonsil pricking him at this spot. He imagined that I had let a bit of silver wire get in behind. There was some swelling and œdema. From this moment he grew rapidly worse. I diagnosed an abscess behind the right tonsil and pillar of the fauces. Pulse was small, weak, and very rapid, temperature 105.5° F., there was hæmorrhage from behind the right tonsil, and he experienced great pain. As over twenty days had elapsed since the beginning of his illness, and as on the closest examination with the laryngoscope nothing moving could be seen, neither myself nor my colleagues suspected what followed.

On February 18th, I opened the abscess just at the edge of the right pillar and bloody, foul pus and thirty or forty maggots appeared. I

enlarged the opening and washed out a like number together with their fœtid nest. The fever and swelling soon subsided. Three maggots came away on the 19th and on the 20th one more. I then began feeding the patient with the stomach tube and he soon got stronger. Washing out with permanganate of potash solution in a few days relieved the fœtor and left me nice clean clefts for an operation. On March 5th, I closed with silver wire all the apertures in the palate and on the 15th he left the hospital cured. The maggots in this case were not all counted, but 200, more or less, came away, all living.

Case II. A gardener was sent into the hospital on February 24th of the same year. He presented swelling of the face and nose and had been suffering four or five days with pain and loss of sleep. He had received several injections of kerosene into the nostril. Only eight maggots came away during the week he was in hospital and he had very slight epistaxis. The treatment used was washing out with chloroform water, inhalations of chloroform, and smelling of gum camphor. This was a very mild case, the eggs being probably deposited close to the external opening of the nostril.

Case III. This case which occurred simultaneously with my two previous ones was attended by Dr. de la Sota, who had the kindness to write it out for me when I told him I intended to publish my two cases. I will simply translate his report.

"Manual L., Spaniard, aged 19 years, single, workman, came to my consulting room on March 2, 1896, and on the same day entered the local hospital as a pensionist."

Personal History.—He says that when nine years of age, while at a college in Spain, he had a fall striking on his nose. Since then he has suffered from occasionally profuse but more often slight attacks of epistaxis with a running of "matter" from the nostrils. He does not know whether this matter was mucus or pus. In the summer time when he forgot or on account of his occupation was unable to wash out his nasal passages with water as he had been ordered to do by his physician, he suffered from a bad smell from the nose especially noted by his fellow workmen. Beyond this and the presence of a broken and rather peculiar looking nose the man is sound physically.

Present Disease.—About 2 p.m. on March 2nd, he came to my office and told me that he had been in Buenos Ayres two nights before and had slept out in the paddocks of the city slaughter-houses after a hard day's work driving cattle to town. Early that morning he awoke sneezing a great deal and with blood clots in his nostrils, which he thought very strange because at other times he had had no sneezing and the blood had run freely instead of being in clots. He had also felt a kind of pricking or irritation, difficult to explain, in his nose and to-

wards his forehead, only relieved by sneezing. In spite of this he again went to sleep being very fatigued. On waking up with the other cattle drivers he was worse and his companions noticed a swelling of his nose, left side of face, and eyelid of the same side. With the peculiarity of the Argentine he paid no attention to these things, nor did his companions, and did not consult a doctor. His friends said it was nothing and would go away. Still he felt uncomfortable sensations in his left nostril and had a watery discharge from it, fœtid, and mixed with a little blood. He also felt feverish, had no appetite, was thirsty and weak. From Buenos Ayres he set out for Dolores on horseback, following the line of railway in case he should get worse and require to complete his journey by train. Last night he again slept out about fifteen miles from here, or rather he lay down intending to sleep but did not close an eye on account of the pain. Early this morning he arrived here and slept an hour or two in the house of a friend before coming to see me.

Present Condition.—March 3rd, a.m., patient lies on his left side, partly turned on to his face, with his head forced into the pillows, keeping both hands applied to his face and breathing through his mouth. His head and limbs are in continual movement. On being spoken to he sits up in bed in an indecisive fashion and acts as if his head were of an enormous weight or as if he were drunk. The left side of his face is swollen as on the previous afternoon and the same bloody, foul smelling fluid is running from the left nostril. On examination, nothing can be seen in the nose. He has not slept since the day before. Temperature 38.8° C. Complains of headache, want of appetite and thirst. The tongue is coated; the heart and lungs are sound, urine normal.

Two cases of a rare disease occurring in the previous month in the hands of two of my colleagues (the cases already reported) made me think of maggots and I did not hesitate in diagnosing myiasis narium produced by the larvæ of the lucilia hominivorax. I prescribed at once a nasal douche of salt water and told the sister in charge to blow into the nostril equal parts of calomel and iodoform after the douche. Some minutes after this was done my patient sneezed and out came about 80 maggots not yet fully developed but which reached their full growth the following day in a bottle with raw meat.

March 4th. To-day my patient has thrown off 30 or 40 maggots, of which I have picked out a few for experiment, *i. e.*, to see if I can obtain the chrysalis and later on the fly. Patient is worse, temperature, 39.9°, C.; pulse very rapid, and he is, to use his own expression, "crazy with his head." I gave him antipyrine instead of the quinine of yester-

day, and told the sister to use chloroform water instead of the saline solution.

March 5th. Saw him twice to-day. He continues throwing out of his nose a goodly number of maggots, some large and some small and most of them living. The treatment was not changed except letting him have an occasional inhalation of chloroform.

March 6th. Since yesterday afternoon he has not thrown off a single maggot and is very ill, acts like a crazy man, it being impossible to keep him quiet. I began the chloroform inhalations at short intervals and in an hour had the satisfaction of seeing about 150 maggots with their filthy nest of bloody, putrid pus coming out of the nostril in a mass.

From that minute he began to make rapid improvement and no more maggots came away up to yesterday, March 10th, when he left the hospital for his home in Dolores, still very weak but able for the four hours journey by train.

This individual had thrown off at least 250 living and perhaps 30 dead maggots."

I saw this case several times with Dr. de la Sota, but could never see anything wrong with his soft palate or throat, so suppose the fly deposited her eggs higher up in the nose than in Case I. Doctor Letamendi, who sent me Case II, had been in Chascomus for nine years and for six years previously in Buenos Ayres, and had never seen a case of this kind so it must be rather rare.

Very little is said about the disease in Mackenzie's text-book, so I will refer to some of the practical points I have since learned from Dr. Edward Obejero (a pupil of Morrell Mackenzie, by the bye) professor of diseases of the nose and throat in the University of Buenos Ayres. He says it nearly always occurs in persons suffering from ozæna or who have bad smelling discharges from the nose from any cause; that it is often fatal and the best treatment is chloroform, either as a vapour or in solution, and an infusion of albahaca, a native plant, which I do not think is recognized in the European pharmacopœias. He says also that the destruction to tissues is sometimes very great. I, in my nine years and a half in this country, have only seen these three cases, all in a month. Dr. Goldsack here in Mendoza has told me of a case in a young lady, much similar to the first case reported, and which was fatal in four days from what he considered meningitis.

From what I have been told, Case III of this paper is most typical of the three reported.

Two Cases of Diaphragmatic Hernia.

On June 29th, 1894, I was called out of bed to see a wounded man, H. L., aged forty years, a healthy, strong cattleman. He had been

wounded in the afternoon twenty miles from Patagones where I then lived.

I found him weak from the loss of blood and the hardship of a journey in a springless cart on a mattrass. He had a sheet applied so as to make a firm bandage outside of his ordinary clothes. On taking off his clothes, I found a knife wound, some four inches long, in the left side between the eighth and ninth ribs in the anterior axillary line. Over the wound and flattened down against the thorax was what I took from its colour and feel to be the lower margin of the left lung, a piece the size of an adult hand protruding. This projection I decided to amputate at once and to reduce the rest of the organ.

By candle light, my patient lying on the floor in the police station, I began the operation by peeling off the projecting mass from the thorax and pulling it out a little more so as to ensure cutting in a clean place. On cutting into the mass I discovered that it was not lung tissue at all but one of the appendices epiploicæ of, I supposed, the transverse colon in its curvature, or from the upper part of the descending colon. I cut off the bit, however, and then ligatured the arteries and then sutured the external wound and dressed it with iodoform gauze, etc. At that time I had never heard of, or if had I had forgotten, the possibility of such a thing as a diaphragmatic hernia. I was soon to know what it was practically.

The external wound in spite of everything, dirt, germs, and a twenty mile journey before being stitched, healed by first intention, but my patient kept ill. Pain, dyspnœa, and palpitation of the heart were complained of. On examination fifteen days after the operation, I found the heart pushed over under the sternum, the left lung also out of place while at least one half of the thorax was occupied by intestine. The patient refused to eat on account of the pain he said it caused him afterwards. The gurgling of a dose of salts could be heard at the left nipple. There could be no doubt of the diagnosis. He would not hear of an operation, and so far as I know, still has his hernia.

The symptoms in this case were pain, shortness of breath on the slightest exertion, inability to lie on the left side and, at first, palpitation. A year after the wound the symptoms were the same and he got much thinner.

Case II. What would an eastern Canadian doctor do if he were called by telegraph 39 leagues (107 miles), to see a patient with a stab wound of the abdomen ?

At 8 p.m., on May 23, 1895, I was asked to go and see a gentleman named G. in Conesa, 39 leagues away from Patagones. They told me that he had been stabbed in the belly and that his intestines were out, and to come quickly. I telegraphed to his friends to wrap him up in a

clean warm sheet and keep him lying down until I came. There are two telegraph stations on the road between Patagones and Conesa, so his friends ordered fresh horses to be ready at any hour. At 11 p.m., I got into the saddle and at a stiff gallop started on my long ride. At 11.15 a.m., next day, I arrived in Conesa after changing horses five times.

G. had been wounded seventeen hours before in the epigastric region, was in great pain and vomiting had begun an hour before my arrival. I at once gave him a ½ grain of morphine hypodermically, and after washing with warm boracic acid solution the extruded intestines, I replaced them and sewed up the wound without drainage. In an hour I gave him another injection of morphine. The vomiting ceased and, to make a long story short, he got better in a week.

Shortly after he began to get about he complained of pain, shortness of breath, and also inability to sleep on the left side. On examination I found the same signs, but not so marked, as in Case I; he never complained of palpitation. He would not be operated on and still lives, but can take no exercise, in fact I am told he is a confirmed invalid, and quite believe the story.

He was 55 years of age at the time of the wound and my surprise is that he did not die before my arrival from the peritonitis which had already started when I operated. The country air, free from germs, and the hardy constitution of the Argentine camp-men, explain why many very severe wounds of the abdomen are not fatal in the Argentine camps—camp country. I believe an operation would cure both of these cases and see that Treves recommends it in his System of Surgery, 1896.

SURGICAL GLEANINGS FROM ABROAD.

L. Coyteux Prevost, M.D., of Ottawa.

[Concluded.]

Cancerous affections over there, as well as on this side, keep the surgeons in total despair. The unmerciful recurrences which so stubbornly and so frequently occur, ever after the most radical treatment, almost cause us to doubt whether we shall ever succeed in victoriously combating this formidable plague by surgical means. Indeed, we are anxiously longing for the time when bacteriology shall have, firmly secured, surrendered to us the germ of this disease or the vaccine which will shelter humanity from its deadly blows. You know through how many successive phases has passed, for example, the treatment of cancer of the breast. We thought sufficient, at first, to remove the tumor alone; the evil came back in the gland. The whole breast then was sacrificed every time; the cancer would spring up again in the axillary glands. The latter had to be carefully scooped out at every operation, even when they seemed to be perfectly sound; the hydra would appear in the aponeurosis of the thoracic muscles. Finally, Halsted deemed it indispensable to cut down, at a stroke, the seven heads of the monster, and proposed a truly herculean operation, advising the removal of everything at once: tumor, mamma, axillary and subclavian glands, aponeurosis and pectoral muscles. I saw McBurney perform that operation at Roosevelt; it took him one hour and a half to do it. According to him, this is the only operation which allowed his patients to remain, two, three and four years without any recurrence of the disease.

Gynæcologists are a prey to the same discouragement, with regard to the cancer of the uterus. At first, they merely amputated the cervix, and you remember surely with what talent Verneuil upheld this operation against those who already were advising total hysterectomy, owing to the frequent recurrences they had met after simple amputation of the cervix. Unfortunately, vaginal hysterectomy itself was so frequently found insufficient that gynæcologists lately thought it better to follow Halsted's example in mammary carcinoma. They proclaim that the only rational and efficacious operation is to remove the uterus by the abdomen in order to dig down into the pelvis and extirpate all the glands and as much as possible of the broad ligaments and parametric tissues. What will be the future results of this extensive mutilation? We cannot tell. However, I am very much afraid that it may share

the fate of the other operations which it boasts of advantageously replacing. I quite understand that it might be possible to scoop out all the pelvic glands in which the uterine lymphatics end, but how can we extirpate the glands which receive the lymphatics of the ovaries, situated, as they are, away up almost on the level with the diaphragm ?

'Finally, cancer of the rectum has so far defied all surgical treatment directed against it. Kraske has surely made a step forward but the number of cases amenable to his method is also very limited. An English surgeon thought he could go further, and has given lately a description of a process which permits us to reach the limits of the disease as far as the sigmoid flexure. Availing himself of Kraske's incision, he detaches the gut, gradually cutting the meso-rectum, and doing hæmostasis step by step. He pulls out as much as eight or ten inches of the intestine, which he resects, uniting afterwards the sound portion to the external opening. This may, perhaps, appear quite simple. You might try to do it. Still I believe that such an operation has some emotion in store for the operator who undertakes it.

The radical cure for hernia is now done everywhere. I saw it performed at the Mount Sinai Hospital by Gerster; at the German hospital by Willie Meyer; at St. Francis Hospital by Edebohls; at the Post-Graduate by de Garmo; and in Paris by Lucas-Championniere. All, except the latter, have adopted Bassini's operation. Lucas-Championniere operates differently and does not believe in the absolute necessity of uniting with such care Poupart's ligament to the conjoint tendon. After the section of the sac, he brings together the muscular lips of the wound and causes them to side one upon the other by a special disposition of the sutures, and lays the cord between this muscular layer and the integuments. He contends that this mode of operating is the best safeguard against the recurrence of the hernia.

The most striking feature which attracts the visitor's attention in New York is the excellence of the operative technique, and the irreproachable way with which the rules of asepsis and antisepsis are carried out. I willingly couple these two terms side by side, because, to my mind, it is impossible to adopt one method to the exclusion of the other. Whenever sterilisation can be obtained by heat, naturally this is the means we must resort to; but for all parts of the body which cannot be submitted to the action of a high temperature, antiseptics constitute the indispensable complement to the mechanical action of washing and scrubbing. However, I know some surgeons, namely, Outerbridge, who never use any antiseptic whatever, a fact which did not prevent this surgeon doing his hundredth laparotomy last year without accident. In some hospitals, surgeons and assistants don rubber or cotton gloves

in operating. Others cover their hair with a bonnet, and finally, some imprison their whiskers in a wide strip of gauze soaked in sublimate solution and tied behind their head. But every one of them is helped by one or more assistants accustomed to work with them and who, conversant with the habits of the operator, can guess his wants and supply what is required without being asked. This "team-working" is, to my mind, the *sine qua non* of a regular and rapid operation. I say rapid, but I do not mean that we must aim at those ridiculous records which some surgeons proudly boast of, claiming, for instance, that they usually remove a uterus in eight, ten or twelve minutes. No; still it is absolutely important that the patient should remain as shortly as possible under the influence of the anæsthetic and those operations lasting two hours or more should no more take place in the hands of a surgeon who knows his business and is surrounded by competent and skilful assistants.

They also try to-day to do abdominal sections with as few instruments as possible, and I saw several laparotomies performed with only one scalpel, one pair of scissors and a few hæmostatic forceps; always with the view of diminishing as much as possible all chances of infraction of the exigencies of scrupulous antisepsis.

There is no more discussion now about the advantages of Trendelenburg position which is adopted by all surgeons, especially when operating on the internal genital organs of the woman. It is owing to this position, which carries the intestinal mass away from the area of operation and allows us to thoroughly see the whole of the pelvis, that abdominal hysterectomy has become just as common an operation as formerly was ovariotomy, and which permits our freeing and removing almost without danger the appendages gorged with pus.

The size and situation of the abdominal incision are still a source of dispute in certain places. A great many surgeons claim that this incision should be as small as possible. Some contend that it should be made through the muscles; others stick to the old way, the linea alba. The wisest, in my humble opinion, are those who divide the tissues on the mediam line, cutting right down to the peritoneum without minding what they go through.

Some discussion about the closure of the abdomen. Almost every one uses three or four layers of sutures, but several and amongst them, very prominent men, such as Joseph Price, of Philadelphia, and Outerbridge of New York, still suture the incision through and through. I have already stated that the latter has recently done one hundred abdominal sections without accident, having very seldom, if ever, heard of hernia or suppuration. These extraordinary results, if they do not prove the superiority of his method, seem to show, at any rate, that it is at

least as good as any other. He attributes the absence of post-operative hernia in his cases to the scrupulous care with which he endeavours to catch the peritoneal lips of the incision as near their edges as possible, in order to avoid creating an infundibulum, which later on might produce a tendency to eventration. Post-operative hernia, anyway, is becoming more and more rare in the hands of all surgeons, and I believe that this fact must be attributed to the gradual disappearance of abdominal drainage to which we have now recourse only in exceptional cases. Glass drainage tubes belong hereafter to the domain of history. Rubber tubes are going also. Abdominal drainage with strips of iodoform gauze, seem to have a tendency to follow the others, and in gynæcology, whenever a suspicious operation or some considerable oozing compels us to resort to drainage, it is through a vaginal incision that it is done, it is just as efficacious and surely more rational. With the disappearance of the abdominal drain, when we shall have found the means of avoiding altogether the suppuration of the abdominal wound in every case, we shall then very seldom hear of post-operative hernia. Yes, but here it is. Unfortunately that suppuration of the incision, those stitch abscesses, are still the nightmare of abdominal surgery. We do not know yet how to shelter ourselves against the misdeeds of staphylococcus albus which is securely concealed in the deep layers of the epidermis. However, I believe that this foe is quite inoffensive in the majority of cases, and that it annoys us only when we supply him with a medium of culture favorable to his development. This medium of culture is the moisture of the wound. I have studied this question with much care and have come to the conclusion that it is absolutely necessary in closing the abdomen, to pay the utmost attention to hæmostasis, putting a ligature upon all bleeding points. I am convinced that we are wrong in so frequently incriminating the lack of sterilisation of the sutures used when we meet with suppuration of the wound ; hence all those different processes to sterilize ligatures and especially the catgut. A great many operators until very lately had even discarded altogether this beautiful material, owing to its ordinary unreliable sterilisation. However, this unjust ostracism shows more and more a tendency to disappear, and permanent sutures left in the midst of the tissues, are not meeting with the same favor as before. For instance, with the exception of Emmet, I do not know a single operator in New York who still uses silver wire, almost universally used five or six years ago, to suture the abdominal wound, and especially in performing trachelorraphy. Furthermore, we wonder whether silkworm gut itself is not beginning to undergo the same fate; I mean as permanent suture in the reunion of aponeurosis, because it is still quite commonly employed for the suture of the skin. Even for this, the subcutaneous suture seems to

become exceedingly popular. In fact, it is a perfect suture, aesthetically speaking; it has but the inconvenience of all continuous sutures: if it gets infected at one end, the whole suture is generally doomed. Edebohls has remained faithful to catgut sterilized at the temperature of 212° in boiling alcohol under pressure. He makes use of the finest kind, 0 or 00, and has always had with it excellent results. A great many are now using catgut sterilized by its immersion in a 4 per cent. solution of formaldehyde during 48 hours. I have been using myself, for the last year, catgut prepared according to this method, which I consider an ideal one because it allows of our sterilizing the catgut absolutely like all other ligatures, that is, in keeping it as long as we like simply in boiling water.

There are certainly, gentlemen, a great many questions of details, *e.g.*, preparation of the operating room, qualification of the assistants, size and situation of the line of incision, position of the patient, choice and sterilization of ligatures and dressings, etc., etc.; and I am far from pretending that we should disregard all these important precautions. But it would be a deep error to believe that here only lies the secret of success in the formidable operations of modern surgery. It suffices to see, once, our masters at work, to remain convinced that something else is required to safely venture ourselves on such grounds. In spite of the display of all the means which the antiseptic arsenal contains, it is criminal, it seems to me, to plough the entrails of a patient, knife in hand, without possessing the coolness, the tact, the intelligence and the anatomical and surgical knowledge which constitute a true surgeon. It is only after a special and deep study, after the frequenting of the amphitheatre and hospitals, and the attentive contemplation of the work of our masters, that any one is allowed to legitimately hazard himself in that surprise-box which is called the abdomen. To cut out and extirpate a tumor with more or less skill, to remove more or less diseased organs, and afterwards to victoriously rub our hands together with satisfaction over the operation, is a very poor result after all, if the patients dies in a few days, or if later she continues to suffer from the same symptoms she was complaining of before the operation. A great many seem to forget that the surgeon's supreme desire, when he takes the knife, should be the relief of the suffering being who begs his assistance. To reach this aim, more than one issue has to be considered in the majority of cases, and frequently a too hasty determination prepares for its author very bitter remorse. In spite of its progress, gentlemen, the philosopher's stone has not been found yet in surgery, and if the most eminent men, with incomparable richness of materials at their disposal, trod that path with so much shrewdness and caution, how much more necessary is it for less privileged others to do

all in their power to acquire the qualifications indispensable to their guidance. Above all, no human consideration should ever make us forget the old and charitable axiom: "*Primo non nocere.*" One must have sometimes the courage of confessing that there is a thing or two that he does not know or that he is not able to do properly. Pride or personal interest should never be put in the balance with the interest of those who confide their life or their health to our care. The fact of being able to terminate more or less successfully an operation perhaps sometimes undertaken at random, must not be the climax of our ambition, and every honest member of our profession should always bear in mind that his primordial duty is to eradicate an evil, heal up an injury, and relieve suffering.

I am sorry, gentlemen, that the limits I imposed upon myself in this paper do not allow my enjoying the pleasure to prolong in your company this incursion into the vast and so interesting field of modern surgery. But I would really feel much humiliated if, owing to the late hour, our worthy president found himself compelled to make me stop. Therefore, I shall end here, but not before I have said a word concerning a question which still continues to impassion all gynæcologists, although the discussion has begun somewhat to abate.

During the summer, it was my good fortune to pay a short visit to Paris, where I had the pleasure of meeting the charming man of whom you have surely frequently heard, since he is one of the lights of French gynæcology, I mean Paul Segond. Jacob of Bruxelles, Delageniere of the Mans, Laroyenne of Lyon, Doyen of Reims, Bouilly, Doleris, Richelot, Pozzi, Segond in Paris are as many constellations shining with the most resplendent brightness in the firmament of French surgery. Until 1896, a contest, international as it were, was engaged in between the French and American gynæcologists, in order to decide by which route was preferable to remove the uterus or the diseased appendages. The French were in favor of the vaginal and the Americans the abdominal route, and on both sides, irresistible arguments were brought forward. Both were combating in the light of experience. And surely, when one has performed an operation 400, 500, 600 times, he is entitled, I fancy, to give his opinion upon the matter. And such was the number of vaginal hysterectomies that some of the French surgeons had to compose their personal statistics. The Americans, if they had not, like the French, the same experience in vaginal hysterectomy, on the other hand, had just as frequently dealt with similar pathological conditions by the abdominal route, which, according to them, was undoubtedly the better way.

Jacob of Bruxelles, in 1895, thought he would cross the ocean, armed with all his instruments, and pay the United States a short surgical visit

to convince the stubborn Yankees of the excellence of his method. However, the results of his endeavours were nil ; the Americans' convictions remained unshaken, and Jacob went back to his country, without having himself modified his own opinion.

Twelve months afterwards, Paul Segond followed the example of Jacob, and came to the United States, accompanied by his assistant, Dr. Chauveau. I was fortunate enough to meet both in New York at the time of the meeting of the American Gynæcological Congress. Every one was anxious to see the great French surgeon at work, and every day, in one hospital or another, patients were presented, upon whom he performed vaginal hysterectomy. His wonderful dexterity amazed everybody. "Indeed," said they, "when one operates with such ability it is not surprising that he should have a special predilection for vaginal hysterectomy."

Nevertheless, the Americans returned the politeness, and operated through the abdomen in the presence of Segond. Do you know what the result was ? Segond returned to France, at first with shaken ideas, but very soon convinced that the truth lay on this side of the Atlantic, and at a meeting of the surgical society held in Paris in 1897, he made a characteristic profession of faith contained in the following title of a paper published in the Review of Gynæcology and Surgery: "On total abdominal hysterectomy in the removal of large fibroids and on the treatment of pelvic suppuration. Considerations upon its technique and upon the *superiority* of the American method."

I have nothing to add to this significant and eloquent declaration.

Must we conclude that vaginal hysterectomy is doomed and must hereafter always give precedence to abdominal hysterectomy ? No ; but the field of its indications has greatly diminished within the last few years, especially ever since that, owing to Trendelenburg position and the easy and effective protection of intestinal coils by antiseptic pads, we are allowed almost in every case to extirpate appendages full of pus, with hardly any risk of contaminating the peritoneal cavity. The results of the discussion have permitted the surgeons to render more precise the indications for the operation and to keep it together upon the ground which is suitable to it and where its excellence remains indisputable.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Movable Kidney Producing Symptoms Simulating Gall-Stone Colic.

MACLAGAN and TREVES. "Three Cases in which Movable Kidney Produced all the Symptoms of Gall-Stones." *Lancet, Jan.* 6, *1900.*

A movable right kidney pressing upon the bile ducts was the cause of hepatic colic and jaundice in the cases cited by the authors. In each case a diagnosis of gall-stone was made before the operation, but in none was a stone found after the abdomen had been opened. In the first and third cases the kidney was found pressing upon the cystic duct; in the second case the pressure was upon the common duct.

The patients were women, one aged 35 and the other two 34 years. As their symptoms were almost identical, the history of the third case only will be mentioned. She was a woman of spare habit and had suffered for three or four years with indigestion, pain in the epigastrium and symptoms of biliary catarrh. During her attacks of pain the gall-bladder would be felt more or less distended, and after each she was slightly jaundiced. The right kidney was movable and could be felt under the liver. The attacks of pain became progressively more severe and she was persistently slightly jaundiced. A diagnosis of stone in the cystic duct was made and she was treated medically for some months without benefit. Shortly before surgical measures were adopted, she had attacks of pain every few days, pain so severe that morphia had to be used to control it. The gall-bladder was persistently enlarged and tender. At the operation the gall-bladder was found much distended, but no stone was found. It was discovered, however, that the upper end of the right kidney was pressing directly upon the cystic duct. The abdominal wound was closed and incision made in the loin and the kidney secured by three silk sutures. The patient has since that time put on flesh, has a good colour, and has had no return of the pain. An equally favourable result was obtained in the first and second cases.

Dr. Cordier, of Kansas, records a case exactly similar to that mentioned above where complete relief of the symptoms was obtained by securing a movable kidney.

Ligature of the Left Subclavian Artery for Aneurysm.

KAMMERER. "Ligature of First Portion of Left Subclavian Artery for Aneurysm: Death after four weeks." *Medical Record, Dec. 23, 1899.*

This case is of interest inasmuch as the vessel was tied within the thorax.

The patient, a man aged 47 with a luetic history, noticed a small swelling in the supraclavicular region four months before he entered hospital. When Dr. Kammerer saw him the tumour was the size of a man's fist and filled up the angle formed by the clavicle and the sterno-mastoid. The tumour was adherent to the skin. As the tumour was rapidly increasing in size and threatened to rupture externally, operation was thought advisable. A transverse incision passing over the manubrium sterni and the ends of both clavicles was made. A vertical incision extending from the cricoid cartilage allowed of the flaps being dissected back. About two inches of the sternal end of each clavicle and first rib were resected and a corresponding portion of the manubrium sterni. The main difficulty experienced in obtaining access to the aorta was caused by the arch of the superior cava and the innominate vein. These were, however, finally hooked up; the artery was exposed with the finger tip and cleared from the surrounding tissue. After much trouble an anerurysm needle with a thread was passed beneath the artery and the ligature consisting of several strands of chromicised catgut, was attached to the thread. The ligature was tightened until pulsation in the aneurysm entirely ceased. The vertical incision and the ends of the horizontal incision were sutured and the remainder of the wound was packed with gauze. For three weeks the patient progressed favourably. There was no pulsation in the aneurysm which had decreased considerably in size. On the twentieth day after operation the dressings were found saturated with blood and there was more or less hæmorrhage from that time onward until the patient's death from exhaustion on the thirtieth day after operation.

At the autopsy it was found that the hæmorrhages resulted from a rupture of the artery at the site of the ligature. The ligature was partially absorbed, but a few strands were still present, and these had almost completely severed the vessel. Whether or not the inner coat of the artery was ruptured when the ligature was applied remains in doubt, but the fact that no clot was found in the proximal side of the ligature would point to the vessel walls having remained intact.

E. J. Semple.

The Choice of an Anæsthetic.

An interesting discussion on the above subject took place some time ago before the Society of Anæthetists of London, a full report of which is contained in the Second Volume of the Society's Transactions, just issued. Besides the regular members of the Society there were present, by invitation, a number of the more prominent London surgeons whose views will be read with interest.

Mr. E. F. White, late anæsthetist to St. Thomas's Hospital, in opening the discussion, held that the main point to be considered in making a choice was the question of the greatest safety. For general use, leaving out of account the more recent additions to the list of anæsthetics, he considered that in point of safety the three commonly used agents should be placed in the following order :— nitrous oxide, ether and chloroform. In doing so he quoted as the accepted statistics of deaths under chloroform and ether, 1 to 3000 for chloroform and 1 to 16000 for ether, and contended that this alone should decide between the two. The contention that ether was responsible for many deaths through the production of lung troubles after its exhibition, he thought was not proven, while the number of those who were saved from death during the operation by the stimulating effect of ether, though it could not be estimated, ought to be taken into consideration. Another point was that ether in moderately healthy persons is practically free from risk while chloroform seems to choose the apparently healthy for its victims. In the latter, too, there was no time available for restorative measures, death took place almost instantaneously, while in the former failure was more gradual and could be met by appropriate treatment.

Mr. White well expresses what we think is felt by all anæsthetists who have had a large experience with both agents when he says:—"As an administrator I feel happy when using ether, hearing my patient breathing deeply and regularly with a good pulse, a pulse and respiration that is not suddenly acted upon by reflexes due to the operation. With this pulse and respiration of ether any slight deviation is easily noticed and can be as easily rectified ; whereas with chloroform such a change is very sudden and of grave import. The more I give chloroform the more anxious I feel during the administration of it ; the converse with ether, for the more I administer ether the more confidence I gain. In operations that are likely to extend over a considerable time the advantage on the side of ether is very great, for after about three-quarters of an hour or even less of an administration, an anæsthetic sleep can be produced that is alike of advantage to the patient on account of the small amount of ether used and to the operator on account of the quiet state of the respiration, ether all the while helping

to ward off shock." Mr. White, however, feels that ether cannot keep off shock indefinitely and appealed to the surgeons to help in shortening the length of operations, a point worth considering as, now that the ability to operate rapidly is no longer considered essential in a successful surgeon, there is often a tendency to spin out operations unnecessarily, as, for example, while the surgeon is addressing his class.

The need of having a proper inhaler was held to be more essential in ether administration than in chloroform; the use of the cone which entails giving large quantities of ether was strongly condemned. The speaker preferred a Clover's inhaler.

Mr. Edmund Owen, one of the invited guests, took an entirely different view of the matter, strongly favouring chloroform. He, however, would insist on the services of a skilled anæsthetist in giving it. In support of his views he related the case of a lady, the matron of a surgical home, who had required an anæsthetic and who had begged to have chloroform given, not ether. On asking her "why not ether?" she had replied, "ether is beastly stuff," and this was his own opinion. It was the general opinion that there was more risk from chloroform, but he would say "its worth it." Arguments such as this can have but little weight and show a personal predeliction rather than any cogent reasons for preferring chloroform. It is noteworthy that throughout the whole discussion the exponents of the general use of chloroform with one exception were the surgeons who were present by invitation; while on the other hand, ether found its warmest supporters among the professional anæsthetists.

Others who took part in the discussion were Mr. Arthur E. Barker, Mr. Herbert Allingham, Mr. Tyrrell, Mrs. Scharlieb, Dr. Silk, Mr. Henry Davis, Mr. Warrington Haward, Sir Felix Semon, Dr. G. H. Savage, Dr. Macnaughton Jones, Mr. Stanley Boyd, Mr. Eastes, Mr. Carter Braine and Dr. Dudley Buxton, the President of the Society. While there was great diversity of opinion regarding the proper anæsthetic in some operations, in others again there was perfect unanimity. The following is a summary of the preference expressed for one or other anæsthetic in the various regions, etc. Where one only is mentioned the opinion in favour of it was unanimous.

Intra-cranial operations. Chloroform.

Ophthalmic operations. Chloroform was used by the three who referred to this class of cases, but they all alluded to the danger of sudden syncope following division of the optic nerve, and two of the three advised giving a little ether just before this step was undertaken. (It would appear preferable to avoid the danger entirely by adopting ether in all cases).

Cleft palate. Opinion was unanimously in favour of chloroform, both from the impossibility of administering ether properly in these cases and from its tendency to produce a copious secretion of mucus in the respiratory passages.

Adenoids. Opinion was about equally divided, although most of the exponents of chloroform referred to the added danger of its use in this operation and recommended the substitution of ether if dangerous symptoms arose.

Tonsils. Here, again, the elevated position of the head usually adopted for this operation adds considerably to the danger from chloroform. (One would make the same comment with regard to adenoids and tonsils as in excision of the eye : Why not avoid the danger altogether by using ether ?)

Larynx and trachea. Chloroform is to be preferred for the same reason as in the operation for cleft palate.

Glands in the neck. Mr. Owen drew attention to the extreme liability to the occurrence of sudden syncope during the removal of glands from the neck. (Here again the difficulty could be minimised by using ether).

Acute pulmonary diseases. Chloroform.

Thyroid. Only one of the speakers referred to operations upon the thyroid gland and, contrary to the general opinion, he (Mr. White), after a considerable experience with both agents, preferred ether.

Valvular disease of the heart. Where compensation is perfect, ether is preferred, but under the opposite conditions, chloroform.

Atheromatous vessels. Chloroform.

Abdomen. The general trend of opinion was in favour of ether as tending to minimise the danger from shock. Many of the surgeons, however, complained that there was more difficulty in operating under ether than under chloroform, both from the incomplete relaxation of the abdominal muscles and from the more violent movements of the abdominal contents produced by the deeper breathing of ether anæsthesia. One of the surgeons went so far as to say that the movements had made him seasick.

Renal disease. Opinion was pretty evenly divided, the existence of renal dropsy, however, was held to indicate chloroform.

Rectum and genito-urinary system. Ether.

Diabetes. In this disease there seems to be little choice between the two agents.

Parturition. Several of the speakers thought that ether should be more generally adopted for operations upon the parturient woman, pointing out that chloroform was not as free from danger as was generally held.

Age. The view at one time generally accepted, that chloroform carefully administered is almost free from danger in young children has been gradually changing of late years so that at present, even in London, one finds almost as many anæsthetists favour ether as chloroform. This change of opinion is due to the fact that statistics have shown that in proportion to the numbers operated upon there are as many deaths from chloroform in children as in adults ; and also that ether can be administered easily to infants of a few months old. These two facts were evidenced by a number of the speakers. (The writer can verify the latter part of the statement from personal experience with infants under three months old, using a Clover's inhaler and administering the vapour very much diluted).

The A. C. E. mixture came in for a good deal of abuse and not a little praise. The majority of anæsthetists, however, who felt that something was to be gained by combining ether and chloroform, preferred to have both ready at hand and to change from one to the other as the case demanded rather than to use a mixture of doubtful stability and unknown proportions when vapourized..

(Throughout the whole discussion one notes the growing feeling in favour of ether, especially among the professional anæsthetists connected with the large London hospitals. There is abundant evidence, too, that, at least among the professional anæsthetists, the indications for the use of both chloroform and ether are becoming better understood, and men are less inclined to style themselves either "etherists" or "chloroformists," and to boast that they never give any but the one anæsthetic.

G. Gordon Campbell.

Obstetrics.

UNDER THE CHARGE OF WILLIAM GARDNER.

Rupture of the Uterus.

Ross, James F. W. "Rupture of the Puerperal Uterus." *American Jour. of Obstet., December, 1899.*

Ross divides cases of rupture of the uterus into four groups :—

(1) Those in which the rupture is immediately followed by symptoms of collapse and internal hæmorrhage. These he considers as hopeless from the first.

(2) Those in which rupture takes place but gives rise to no immediate symptoms and is only discovered on careful examination after the development of septic peritonitis, etc.

(3) Those in which the rupture is easily recognized and is not immediately fatal.

(4) Those in which the rupture is never recognized but in which septic symptoms develop without apparent cause.

According to such a classification the treatment must be directed. In the first class no treatment will avail as the hæmorrhage and shock prove rapidly fatal.

In the second class of cases he advises thorough cleansing and drainage from below, considering that nothing but evil could result from abdominal operation. He reports two cases which recovered through this line of treatment.

In the third class, where the patient is not moribund, the most satisfactory treatment is abdominal section with cleansing of the peritoneal cavity and the stoppage of hæmorrhage, either by approximating sutures or gauze packing, with the thorough establishment of vaginal and abdominal drainage. Suturing of the rent is not called for as it prolongs the operation and the edges of the wound are as a rule so bruised as scarcely to hold a suture.

In the fourth class of cases the difficulty is to make a diagnosis of uterine rupture or internal puncture. He considers that in all cases where the pulse is abnormally rapid when compared with the slight difficulty of the labour it is the duty of the physician to make a careful digital exploration of the uterine cavity in order to ascertain the presence of any rupture. Should a laceration be found, then the treatment should be that recommended for the third class of cases.

The Frequency and Mortality of Abnormal Pelves.

DAVIS, EDWARD P. "The Frequency and Mortality of Abnormal Pelves." *Amer. Obstet. Jour., Jan., 1900.*

Davis, after an examination of 1224 patients who were of all races inhabiting the United States (except the Chinese and Indian), who were examined by pelvimetry and palpation both external and internal, considers himself justified in formulating the following conclusions :—

(1) Among child-bearing women of the United States of the white and negro races, 25 per cent. have pelves smaller than the average and 7 per cent. have pelves larger than the average.

(2) Four-fifths of the patients having abnormal pelves delivered themselves spontaneously. The operations most suitable for well marked pelvic contractions and most successful for mother and child are the induction of premature labour, symphysiotomy, and Cæsarean section when the mother is uninfected and the child in good condition, and embryotomy when the mother is infected and in bad condition and when the child is dead or likely soon to die.

(3) The general mortality rate and septic mortality rate of all classes of labour and of labour in abnormal pelves compare favourably with the results obtained by modern medicine and surgery when obstetric practice is conducted in accordance with the modern scientific knowledge of the subject.

Acute Puerperal Sepsis.

VINEBERG, HIRAM, N. "The Surgical Treatment of Acute Puerperal Sepsis with Special Reference to Hysterectomy." *Amer. Jour. of the Med. Sciences, Feb., 1900.*

Dr. Vineberg in this paper which was read before the American Gynæcological Society in May, 1899, replies to those who have rather severely criticized his work in connection with the surgical treatment of puerperal sepsis, and takes the opportunity to more clearly define his views upon the subject.

The objection most strongly urged against removal of the uterus in cases of puerperal sepsis is that in acute cases, *i.e.*, cases which succumb in spite of any treatment between the fifth and tenth days, operation is of no value as the patients die whether they are operated on or not; while in chronic cases no such operation is indicated, as they usually get better of themselves.

Vineberg defines "acute" puerperal sepsis as an infection which takes place either shortly before, during, or immediately after labour, which manifests itself by symptoms during the first week of the puerperium

and in which the symptoms persist continuously with variable severity until the disease ends in death, in a cure, or passes into a chronic state. He then quotes from literature 38 cases of acute puerperal sepsis in which death occurred from the eleventh to the thirty-fifth day or on an average of twenty-three days.

In reply to the objection that it is worse than useless to remove the uterus in the hope of arresting a sepsis which has already become general, he cites the condition not infrequently met with in severe cases of appendicitis, where the gangrenous appendix is removed and the patient may get well in spite of a general infection while if the appendix were left in the abdomen the patient would certainly succumb. The points which he makes in his paper are :—

(1) "Puerperal sepsis is a wound fever or wound infection, and wound infection in the female genital canal, as elsewhere, calls for surgical measures such as free drainage, irrigation and a removal with a sharp instrument of any debris or exudate that may form on the surface of the wound. These means failing to accomplish the desired result, ablation of the diseased organ or organs, as a *dernier resort*, is indicated.

(2) In a given case of puerperal sepsis a thorough search is to be made of the whole of the genital canal in order to determine the site of the original infection.

(3) If this is situated in the uterus, curettage, drainage and irrigations are to be employed. In 95 per cent. of the cases of puerperal sepsis now met with this plan of procedure will be all that is necessary to bring about a cure.

(4) In the remaining 5 per cent., roughly speaking, those measures will not be efficacious to arrest the progress of the infection, as will be evidenced by the pulse, temperature, and general course of the disease, and sometimes by local signs. An exploratory laparotomy is then indicated and the further course to be guided by the pathological lesions found. In most of these cases total hysterectomy will be required.

When large collections of pus form and are so situated that they can be readily reached, either by vaginal incision or with one above either of Poupart's ligaments, no time should be lost in resorting to surgical relief. When, however, they are not so favourably situated judicious delay is advisable, with the hope that ultimately the pus may be evacuated without the risk of soiling the general peritoneum.

D. J. Evans.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Canadian Practitioner and Review.

October, 1899.

1. Infant Feeding and Infantile Diarrhœa. J. T. FOTHERINGHAM.
2. The Politzer and Gruber Clinics. JOHN P. MORTON.

November, 1899.

3. Ophthalmology and the General Physician. G. HERBERT BURNHAM.
4. Acute Diabetes. A. F. MCKENZIE.

December 1899.

5. Heart Disease from an Obstetrical Point of View. ADAM H. WRIGHT.
6. Spina Bifida. GEORGE A. BINGHAM.
7. A Few Notes on Ear, Nose and Throat Work, as Taught in Berlin and Vienna. JULIUS E. KLOTZ.

1. Appeared in the September Number of this JOURNAL.

3. BURNHAM points out to the general profession how that some diseases, such as acute and chronic glaucoma, and iritis, could be much more satisfactorily dealt with, if they were recognized earlier, and were more clearly understood. He also urges the importance and difficulty of prescribing the proper glasses for the eye, and the necessity of the physician doing his share in showing to the public the farcial nature of the claims of the so-called "doctors of refraction."

4. MCKENZIE describes a case of diabetes that rapidly proved fatal, and gives a description of the disease.

5. ADAM WRIGHT, in a very interesting paper, considers heart disease from the point of view of the obstetrician, particularly in connection with marriage, pregnancy and labor. He thinks that a woman having a heart lesion which is compensated should not be prevented from marrying. Abortion should not be induced on a woman with heart disease, unless very serious symptoms are present, and premature labor should seldom or never be induced on account of the disease. Mitral stenosis is the most serious lesion during pregnancy and labor—aortic stenosis comes next—then probably aortic incompetency. Mitral in-

sufficiency is the least serious. The treatment during pregnancy would depend upon the indications, strychnine, digitalis, cathartics, nitrate of amyl, nitroglycerine, and regulating the diet. During the labor the action of the digitalis should be kept up especially during the first stage. Give strychnine and stimulants, if required, and chloroform, and as soon as the first stage is completed, deliver with the forceps. The patient should be watched carefully during the third stage, which is the most dangerous time, and for some time afterwards.

6. BINGHAM, in discussing spina bifida, says that he has not declined to operate in any case, and that he is as yet entirely at a loss to know where to draw the line beyond which the operation is unjustifiable. The presence of nerves within the sac is not necessarily indicated by deformities or paralysis. Leakage may occur for several days after operation, but may spontaneously cease, and if great care is exercised no sepsis may result, and the case make a complete recovery.

The Canadian Journal of Medicine and Surgery.

October, 1899.

1. Presidential Address at the Thirty-Second Annual Meeting of the Canadian Medical Association. IRVING H. CAMERON.
2. Christian Science. J. H. RICHARDSON.
3. Typhoid Infection without Lesions in the Intestines; A Case with Remarks. A. MCPHEDRAN.
4. How to Deal with the Consumptive Poor. E. J. BARRICK.
5. Fibrinous Rhinitis. D. J. G. WISHART.
6. Results Already Achieved at the Muskoka Cottage Sanatorium. J. H. ELLIOTT.

November, 1899.

7. Massage and the Relief of Eye-strain in the Treatment of Glaucoma. GEORGE M. GOULD.
8. Tuberculosis and Insurance. JOHN HUNTER.
9. Floating Kidney Simulating Diseases of the Genital Organs in Women. A. LAPTHORN SMITH.
10. Observations on the Relation of the Uterus to the Thyroid Gland. CHARLES E. DICKSON.
11. Antinosine in the Treatment of Chronic Ulcers of the Legs. A. J. HARRINGTON.

December, 1899.

12. Some Incidents in the Life of John Hunter, Anatomist and Surgeon. A. PRIMROSE.
13. On the Significance of Bovine Tuberculosis and its Eradication and Prevention in Canada. J. GEORGE ADAMI.

14. An Inquiry Into the Etiology of Chronic Bright's Disease. A. G. Nicholls.

15. The Great Lakes as a Health Resort. E. Herbert Adams.

16. Craniectomy for Microcephalic Idiocy. W. J. Wilson.

1. Appeared in the September Number of this Journal.

3. McPhedran adds one more to the growing list of cases in which the bacillus of typhoid fever has been found in the organs without the intestinal glands being diseased.

4. Barrick suggests the following plan for dealing with the consumptive poor. (1) The establishment and maintenance of a rural sanatorium in connection with each municipality or group of municipalities for the reception of such cases as admit of a reasonable hope of cure or improvement. (2) The erection and maintenance in connection with the above sanatorium of a suitable isolated building for the reception and treatment of such advanced cases of the disease as are unsuitable for sanatoria treatment, and until such provision is adequate, to utilize as far as practicable the various existing hospitals for that purpose, and to urge upon the authorities of such institutions the absolute necessity of adopting such means of isolation as may be approved of by the Provincial and Local Boards of Health. (3) The co-operation of the Dominion Parliament, local legislatures, municipalities, philanthropic and charitable organizations and individuals in providing the necessary funds therefor.

5. Wishart considers that the accumulated evidence proves that fibrinous rhinitis and diphtheria are not distinct diseases, and that all cases of fibrinous rhinitis need the same precautions as to isolation that diphtheria requires.

6. Elliott describes the plan of treatment that is carried out at the sanatorium at Gravenhurst, and gives a statement of the results that have been obtained.

7. Gould, four years ago wrote concerning glaucoma, that massage, properly and intelligently applied, would seem to be the most clearly indicated therapeutic measure to break up mechanically the clogging process, stimulate additional secretion of diluting and digestive fluid, and arouse normal function generally. He here cites several cases where this method had been employed with great benefit, and described the procedure.

8. Appeared in the November Number of this Journal.

9. This paper has been noted as having appeared in several other Journals.

10. Dickson, from the consideration of about two hundred cases, concludes that the diseases of the thyroid gland are much more common

among women than men. A direct sympathy, if nothing more, between the uterus and the thyroid is manifested in many ways. Before the establishment of menstruation the gland is quite often found to be in a hyperæmic condition, and which usually disappears upon the establishment of that function. Goitre occurring after puberty is frequently associated with amenorrhœa. During pregnancy the gland increases markedly in size, to become smaller upon or shortly after delivery. In many cases pregnancy is directly responsible for goitre, which makes its first appearance early after impregnation. It was noticed that while the thyroid gland was undergoing electrical treatment the susceptibility to impregnation had been markedly increased. The occurrence of the menopause is not always the signal for the recession or disappearance of a goitre, on the contrary, it may increase at any period. A goitre after the climacteric should be regarded with suspicion as being of a malignant character.

13. Adami discusses this subject under three headings. (1) Is tuberculosis in cattle a source of danger to other cattle, so as to seriously affect their well-being, and be a source of loss to their owners? (2) If infectious from animal to animal, is it infectious from animal to man and consequently a source of danger to the human race? (3) If infectious from animal to man, what are the commonest modes of infection and how can the danger be lessened?

14. Nicholls' paper is based upon his original communication which appeared in the March number of this Journal, and contains a few new facts that have been elucidated, and the modification of some of the original ideas.

15. Wilson relates the history of a microcephalic idiot upon whom he performed craniectomy with marked benefit. The conditions which decided for operation were early ossification of the sutures and fontanelles and early dentition, and absence in so far as could be discovered of gross brain lesion.

The Canada Lancet.

October, 1899.

1. The Association of Pelvic Disease and Insanity in the Female. Ernest Hall.

November, 1899.

2. Non-Specific Urethritis. N. E. Aronstain.

December, 1899.

3. Some Historical and Other Data on Circumcision. N. E. Aronstain.

Dominion Medical Monthly.

October, 1899.

1. Movable Kidney. F. B. WILKINSON.
2. Surgery Among the Insane—Its Difficulties, Its Advantages and Its Results. A. T. HOBBS.
3. Why the Undefended Pelvis. ERNEST HALL.

November, 1899.

4. Diseases of the Kidney, Amenable to Surgical Treatment. CHRISTIAN FENGER.
5. Notes on the Diagnosis of Diseases of the Stomach. G. CHAMBERS.

December, 1899.

6. The Therapeutics of Conversion, or the *Vis Medicatrix Spiritus Sancti* as a Cure for Erotic Neurasthenia. A Graduate of Trinity Medical College.
7. The Distribution of Anthrax in Ontario. W. T. CONNELL.

1. WILKINSON cites a number of interesting cases of movable kidney, and deals with the symptoms, diagnosis, and treatment of this condition.

5. CHAMBERS, in a paper on the diagnosis of the diseases of the stomach, for clinical purposes divides these diseases into the following classes: 1. Cases with excess of mucus. 2. Cases with hyperchlorhydria. 3. Cases with subacidity. 4. Cases with excessive quantity of gastric contents. 5. Cases with diminished quantity of gastric contents. 6. Cases with normal functional signs.

7. CONNELL states that in Ontario anthrax is not so uncommon a disease as has been generally supposed. There are at present four centres where the disease has been proven to exist, viz., Guelph, Acton, Listowel and Kingston. On looking over the factors in common of these outbreaks, one can point as probable sources either to woollen mills or, more commonly, tanneries. The tanneries are the only factors in the Acton and Kingston outbreaks. Both are combined in the Listowel outbreak, while woollen mills appear alone in the Guelph cases. The wool and hides used were partially derived from foreign sources, and hence might readily be infected with anthrax spores. He concludes by describing measures that should be taken, first, to prevent further infection from outside sources, and, secondly, to root out the disease in the now infected local areas.

The Maritime Medical News.

October, 1899.

1. Enteroptosis and its Relations to Functional Disturbances. W. F. HAMILTON.

November, 1899.

2. Remarks on Puerperal Eclampsia, with Report of Cases. J. W. Bridges.

3. The Nervous Element in the Diseases of the Skin. G. G. Melvin.

December, 1899.

4. Pyrexia; Its Pathology and Treatment. M. A. B. Smith.

1. Appeared in the September number of this Journal.

Canada Medical Record.

October, 1899.

1. Notes from the Clinic of Dr. F. W. Campbell.

November, 1899.

2. The Medical Aspect of Life Insurance. S. Oakley Vanderpoel.

December, 1899.

3. Deviated Nasal Septum, (A Clinical Lecture). G. T. Ross.

4. Procedure in Post Mortem Medico-Legal Examinations. C. A. Herbert.

La Clinique.

Décembre 1899.

1. Remarques sur le Rôle du Médecin dans la Syphilis Ignorée chez la Femme Mariée. Adelstan deMartigny.

Le Bulletin Medicale de Quebec.

Octobre 1899.

1. La Technique des Autopsies. A. Marois.

2. Epistaxis. N-A. Dussault.

Novembre 1899.

1. (Suite et fin), Technique des Autopsies. A. Marois.

3. Observations d'Examens aux Rayons. Charles Verges.

4. Traitement de la Fièvre Typhoide par l'Acide Borique. F-X. Dorion.

Décembre 1899.

5. Cardiopathie et Mariage. Arthur Simard.

6. Nature du Glaucome. L-O. Gauthier.

Reviews and Notices of Books.

THE HYGIENE OF TRANSMISSIBLE DISEASES. Their Causation, Modes of Dissemination and Methods of Prevention. By A. C. ABBOTT, M.D. Pp. 311. W. B. Saunders, Philadelphia, 1899. Price $2.00.

Dr. Abbott's work is, we think, quite unique in English medical literature. Hitherto one has had to seek for the information it contains in works on the practice of medicine or surgery chiefly in the form of very summary and insufficient paragraphs on ætiology and prophylaxis. In this work is found a sufficiently detailed and systematic account of all the infective diseases with special reference to these two important points.

The first section of the work is devoted to a consideration of the general factors in the ætiology of disease. In the second section the transmissible diseases are taken up seriatim under the headings of Cause, Geographical Distribution, Modes of Dissemination, Portals of Infection and Prophylaxis. The third section deals with "Prophylaxis in General against Infectious Diseases, including vital, chemical, and physical processes, the Management of Contagious Diseases and Quarantine." An introductory chapter is devoted to a short historical account of the growth of our knowledge of hygiene, a plea for systematic instruction in this subject by qualified teachers, and a vindication of the practical utility of the sciences. Beyond a slight redundancy of expression and a perhaps not quite justifiable agressiveness of tone in the introductory chapter, there is little to find fault with and there is much to commend. The very practical pages on disinfection, chemical and thermal, and on the special disinfection of rooms, privies, wells, sputum and schools, and of the hands will be welcomed by all practitioners of medicine and surgery as coming from one who has a personal knowledge of what he writes. There are numerous illustrations including maps, statistical charts, and diagrams and microphotographs of bacteria.

H. A. L.

PROGRESSIVE MEDICINE. Edited by Hobart Amory Hare, M.D. Lea Brothers & Co., Philadelphia and New York, 1899. Vol. III.

This volume fully maintains the standard set by its predecessors. Dr. William Ewart's contribution on Diseases of the Thorax and its Viscera including the Heart, Lungs and Bloodvessels," is the longest in the volume and the most generally interesting, and, as might be expected, is very complete. Of special interest are the sections on pleximetric bones and viscera and auscultatory percussion, the treatment of pneu-

monia and of pulmonary tuberculosis, and the cardiac murmurs and sounds. There is possibly a little too much material presented to the reader and the sifting process might have been pushed a little further without impairing the value of the article. Dr. Ewart has drawn largely on American writers.

The various skin affections are fully considered by Dr. H. W. Stelwagon. Eczema naturally comes in for its usual large share of discussion; lupus erythematosus, lupus vulgaris and leprosy are also the subjects of the more lengthy sections. Dr. W. G. Spiller deals with the Diseases of the Nervous System in 69 pages, giving a very complete review of recent contributions to our knowledge. The last section is that on Obstetrics compiled by Dr. Richard C. Norris.

H. A. L.

SAUNDERS' QUESTION-COMPENDS. Essentials of Diseases of the Skin, including the Syphilodermata, arranged in the form of Questions and Answers prepared especially for Students of Medicine. By HENRY W. STELWAGON, M.D., Ph. D., Clinical Professor of Dermatology in the Jefferson Medical College ; Physician to the Department of Skin Diseases, Howard Hospital ; Dermatologist to the Philadelphia Hospital, etc. Fourth edition thoroughly revised, illustrated. Philadelphia : W. B. Saunders, 1899. Price $1.00.

In looking through the fourth edition of this well-known number of the series of Question-Compends, one is pleased to find that although it does not profess to be more than an aid to the student in acquiring the essentials of dermatology it contains a fair description of many of the rare and recently described skin diseases, of course, in the form of questions and answers. The plates, of which there are ten, and the illustrations in the text are excellent for a small book of this kind, and what is more are selected so as to be of great aid to the beginner in understanding the subject.

SAUNDERS' QUESTION-COMPENDS. Essentials of Medical Chemistry. Organic and Inorganic. Containing also questions of medical physics, chemical philosophy, analytical processes, toxicology, etc. By LAWRENCE WOLFF, M.D., Demonstrator of Chemistry, Jefferson Medical College, Philadelphia, etc., etc. Fifth edition, thoroughly revised by Smith Ely Jelliffe, M.D., Ph. D. Professor of Pharmacognosy, College of Pharmacy of the City of New York, etc., etc. Philadelphia : W. B. Saunders, 1899. Price $1.00.

That there is not much new to add to a work on medical chemistry in the short time which has elapsed since the appearance of the fourth edition of this little book is not to be wondered at. The reviser has

contented himself with making a few alterations in the sections devoted to inorganic chemistry and in enlarging the scope of the organic chemistry, especially in the direction of physiological chemistry. Here, as views alter with great rapidity, even from year to year, there will be found considerable change from former editions.

SAUNDERS' QUESTION-COMPENDS. Essentials of Anatomy, including the Anatomy of the Viscera arranged in the form of Questions and Answers prepared especially for the use of Students of Medicine. By CHARLES B. NANCREDE, M.D., Professor of Surgery and Clinical Surgery in the University of Michigan, etc., etc. Sixth edition, thoroughly revised by Fred. J. Brockway, M.D., Assistant Demonstrator of Anatomy, Columbia University, New York. Philadelphia: W. B. Saunders, 1899. Price $1.00.

The changes in this popular number of the Question-Compends are best shown by quoting part of the reviser's preface to this edition. "The general outline and arrangement of the former editions have been preserved, some new matter has been added, a few small cuts have been discarded or replaced by larger ones, descriptions and statements have been corrected to accord with recent works, and many small words have been inserted adding to the clearness of the description."

INTRODUCTION TO THE OUTLINES OF THE PRINCIPLES OF DIFFERENTIAL DIAGNOSIS WITH CLINICAL MEMORANDA. By FRED. J. SMITH, M.A., M.D. Oxon., F.R.C.P. Lond., Physician (with care of Outpatients) and Senior Pathologist to the London Hospital. New York: The Macmillan Company, 1899.

This book, as the title indicates, is not so much a tabulated list of symptoms and physical signs of disease as an endeavour, by showing the relationship between the pathological conditions and the symptoms and physical signs they produce, to lead the student to draw correct deductions and so arrive at an accurate diagnosis. Thus, for example, taking the section on pain in the chest, the various organic lesions which might be the cause and the points by which to differentiate between them such as character, locality, etc., of the pain are first taken up: then pain about the region of the heart is discussed with a view to determining whether it be of gastric or cardiac origin; and lastly a form of pain situated about the lower ribs on either side but with no accompanying physical signs to account for it, a very common symptom by the way, is explained as probably due to old or recent adhesions of the spleen, liver, or lungs to the diaphragm, or of the intestines to spleen or liver and gall-bladder. The author thinks this is the likely explanation from the frequency with which such lesions are found post-mortem without

a history of any disabling illness during which they might have been produced.

Chapter I. takes up diagnosis in general with a description of the method of case-taking in use in the London Hospital. Chapter II. on the relationships between micro-organisms and zymotic diseases; Chapter IV. on diseases of the thoracic organs, one section of which we have referred to above; Chapter V. on some symptoms of the nose, throat, allimentary tract and annexa. Then follows a chapter each on diseases of the urinary organs, the joints, and the nervous system, and finally a chapter on the differential diagnosis of urgency cases. This latter will be found most valuable for the resident officers of any of the larger hospitals and will repay careful perusal by all.

Altogether the book is highly to be commended as tending to lead the the symptoms in a given case with the tabulated lists of the symptoms of the diseases to which it most nearly corresponds and determining in this way where it ought to be classed.

Society Proceedings.

QUEBEC MEDICO-PSYCHOLOGICAL SOCIETY.

Stated Meeting, October 26, 1899; held at St. Jean de Dieu Asylum Longue Pointe.

DR. BURGESS, PRESIDENT, IN THE CHAIR.

Letters of thanks were read from Drs. Guerin and Urkhart, elected honorary members.

A letter was read from the Provincial Secretary informing the society of the adoption by the Government of the forms of medical certificate for admission of the insane recommended by the society at the last meeting. (See page 811 of the October number).

DR. CHAGNON gave notice of motion that at the next meeting he would move that a special committee be appointed to elaborate a uniform plan for classifying mental diseases and for preparing uniform tables of statistics from the various asylums of the province.

DR. CHAGNON proposed the formation of a society of the physicians connected with the various asylums in the Dominion of Canada with a view to becoming affiliated with the Medico-Psychological Society of Great Britain and Ireland. On motion of Dr. Villeneuve, the president and secretary were requested to correspond with the medical officers of the various asylums upon the subject.

Two Cases of Ephemeral Mania, Uncomplicated by Epilepsy, Intemperanee or Parturition.

DR. BURGESS read a paper with the above title. (See page 938 of the December number).

DR. CHAGNON, in discussing the paper, referred to the following interesting case :—

CXL., 17 years of age, is a baggage master in one of our railway companies. His father died of liver disease at the age of 52; his mother and sister are in good health; two uncles died of tuberculosis. Patient suffered in childhood from measles and diphtheria.

On December 25th, 1895, he began to complain of loss of appetite, constipation, and insomnia with slight fever, followed in a few days by cephalalgia. He gave up work and one month later, January 24, 1896, showed signs of mental trouble which rapidly developed into mania. On January 30, he came under my care at the St. Jean de Dieu Asylum showing absolute incoherency, unceasing garrulity, disordered motions and complete insomnia. On February 5th, we found him on awaking

quite sane. Since admission he had suffered from most obstinate constipation.

On May 24, 1898, CXL was readmitted with a return of the disease which had made its appearance two days previously, after a day and night of hard work requiring great strain. Eight days later he was cured of this attack of mania.

On June 9th of the same year he took part in a religious procession during which he was exposed to a burning sun for more than an hour. The same evening he complained of cephalalgia, the following day refused all food and was in a half sleepy condition, and the next day was again a raving maniac. The duration of this attack was fifteen days.

On July 8th, another long exposure to the sun during a game of football was followed by another relapse lasting for a few days, and a fifth relapse took place on August 1st after a three days attack of fetid diarrhœa. This last lasted for ten days, but he did not leave the asylum until the 25th. After two days spent with his family he returned to the asylum on September 1st with a similar attack and was discharged on October 6th perfectly restored.

Thus, this patient had six attacks of mania which were perfectly distinct from each other and of variable intensity, the longest lasting fifteen days. Taking into consideration the pathological condition of the digestive functions at each attack, auto-intoxication seems a likely explanation of the cause, even for those relapses which seemed to be directly induced by exposure to the sun.

Dr. Villeneuve referred to the case of a woman who had been admitted to the St. Jean de Dieu Asylum at intervals of several years, in 1885, 1894 and 1899, for three very acute maniacal attacks, which had begun suddenly without any apparent or appreciable cause and lasted not more than eight days on an average. The disease was hereditary in her case, one of her brothers having been insane.

Dr. Villeneuve said that the cases reported by Dr. Burgess exhibited clearly the characteristics which Vallon in his report to the Congress of French alienists and neurologists (1898) attributed to ephemeral mania, namely, abrupt appearance, reaching a climax very rapidly and likewise ending in a sudden manner by a return to the condition *quo ante*. The other cases could more properly be called attacks of acute mania of short duration. The cases reported by Dr. Burgess are remarkable from the fact that the attack of transitory mania that one of his patients presented cannot be traced to any pre-existing pathological condition. This is contrary to the opinion of almost the entire body of French alienists as confirmed by a unanimous vote taken at their congress in 1898, to wit, that transitory mania is always symptomatic. Several observations of this kind might re-open the ques-

tion which the French congress settled by its vote : "Does there exist a form of transitory idiopathic insanity?" During an experience of five years in the largest asylum and largest city of Canada as an alienist and medical expert Dr. Villeneuve had never met with a case of transitory mania which he was not able to trace back to some pathological condition.

Dr. Burgess, in reply, states that judging from the cases which he had reported, he would feel inclined to believe in the existence of transitory idiopathic insanity.

Two Cases of Auditory Peripheric Hallucination.

Dr. Chagnon reported these two cases. (See page 115).

Medico-Legal Cases.

Dr. Villeneuve read a paper with the above title. (See page 109).

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK,
A. D. BLACKADER,
GEO. E. ARMSTRONG,
WILLIAM GARDNER,
F. G. FINLEY,
JAMES STEWART,
J. GEORGE ADAMI,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,

WITH THE COLLABORATION OF

WYATT JOHNSTON
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J. C. WEBSTER,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS.

VOL. XXIX. FEBRUARY, 1900. No. 2.

POSTGRADUATE DIPLOMA COURSE IN PUBLIC HEALTH.

An important step has been announced by the Medical Faculty of McGill University in the establishment of a course of post graduate instruction to qualify for a diploma of public health on the same standard as the well known English diploma in that subject.

The special training required is :—

(1) Six months laboratory instruction in sanitary bacteriology, sanitary chemistry, and the chemistry and comparative pathology of transmissible diseases.

(2) Six months practical study of out-door sanitary work in connection with a health board.

(3) Lectures on sanitary law and sanitary engineering and other subjects not covered in the ordinary students' curriculum.

(4) Clinical training in the diagnosis and care of infectious diseases.

Twelve months must elapse between graduation in medicine and the granting of the diploma and the examination is of a searching and practical character.

The instructors are as follows :—Sanitary chemistry, Prof. R. F. Ruttan ; comparative pathology, Prof. J. G. Adami ; sanitary bacteriology, Prof. Wyatt Johnston.

The classes will be open to those attending the McGill Postgraduate

course in May and June, during which period many of the lectures and practical classes will be given.

The University has fortunately met with hearty offers of co-operation and support from the various health boards. Dr. Laberge, Medical Officer of the City of Montreal, having instituted a course in practical sanitation in which he will be assisted by Dr. Wyatt Johnston. Dr. J. A. Hutchinson, Medical Health Officer of Westmount, has also offered facilities for practical study and so has also the Board of Health of the Province of Quebec.

The importance of instruction in practical sanitation is equivalent to that of the clinical work in medicine and surgery for the regular medical degree, and we hope that the facilities thus offered may be fully utilized.

The number at present attending the course is eight, some of whom already hold appointments in connection with health boards. As the facilities for practical work are equally open to all medical graduates, we hope soon to see instruction for the diploma taken up by other medical schools and that regulation may be made by which in the future all persons obtaining positions on health boards will require qualification of this sort in order to hold them.

Apart from the full diploma course for medical health officers it is proposed to establish shorter courses for granting certificates in special lines of sanitary work for sanitary inspectors, disinfectors, etc. It augurs well for the success of the work that the Director-General of Public Health and the Chief Inspector of Stock for the Dominion have both expressed themselves strongly in favour of having officials practically trained in this manner.

McGILL LIBRARY, McGILL UNIVERSITY.

For Quarter Ending January 31st, 1900.

BOOKS PRESENTED BY THE AUTHORS.

Brockbank, E. M., M.D.—The Murmur of Mitral Disease, 1899.

Caton, Richard, M.D.—Temples and Ritual of Asklepios at Epidaurus and Athens, 1899.

Douglas, Carstairs G., M.D.—Chemical and Microscopical Aids to Clinical Diagnosis, 1899.

Powell, Douglas, M.D.—The Principles which Govern Treatment in Diseases and Disorders of the Heart, 1899.

Richardson, M.D.—Biological Experimentation, 1896.

Tilden, W. A.—A Short History of the Progress of Scientific Chemistry in Our Own Times, 1899.

University College of London—Catalogue of the Specimens Illustrating Surgical Pathology in the University. 3 vols., 1890-99.

PRESENTED BY THE PUBLISHERS.

Archives of Neurology, 1899.

Virginia Medical Journal. Vol. III., 1899.

Archives of Neurology and Psychopathology. Vol. II., 1899.

Maritime Medical News. Three volumes, 1896-98.

American Medico-Surgical Bulletin, 1897.

Le Bandage Herniaire Autrefois Aujourd-hui, 1899.

THE LIBRARY IS ALSO INDEBTED TO THE FOLLOWING CONTRIBUTORS.

Boston Public Library (in exchange).

Bibliography of the Anthropology and Ethnology of Europe. Ripley, 1899.

Professor Cameron.

L'Alimentation des Nouveau-Nès. Leverin Icard, 1894.
Die Krankheiten der Eierstöcki und Nebeneiers Stocke. A. Martin, 1899.
Centralblatt für Gynakologie. 12 volumes.
Die Krankheiten des Eileiter. A. Martin, 1895.
Archives de Tocologie. 23 volumes, 1874-96.
Transactions of the Edinburgh Obstetrical Society, 1899.
Transactions of the London Obstetrical Society, 1899.

Professor Finley.

Practice of Medicine. G. E. Malsbary, M.D. 1899.
Clinical Lectures and Cases with Commentaries. Thompson, M.D., 1899. A copy belonging to the author.
Official Handbook of Spas, Watering Places, Health Resorts.
La Semaine Medicale, 1898.
Clinique des Maladies du Systeme Nerveux. Raymond, 1896.

Dr. A. M. T. Forbes.

Guide Medicale Parisien, 1896.
Disorders of the Male Sexual Organs. Fuller, M.D., 1895.

Professor Girdwood.

Aretari Cap-Padocis Medici, Bib. VIII., 1554.
Manual of Chemistry. Simon, M.D. 1893.

Professor Johnston (in exchange).

Diseases of the Fœtus. J. W. Ballantyne, M.D., 2 vols.

Dr. W. W. Keen.

Surgical Complications and Sequels of Typhoid Fever, 1898.
American Text-Book of Surgery, 1899.

Surgeon-General United States Marine Hospital Service.

Six volumes.

Professor Stewart.

Official Handbook of the British Medical Association Meeting for 1899, being the guide to Portsmouth and Southsea.
Handwarterbuch der Gesamter Medizirs Villaret, Bd. I., 1888.
Speciellen Pathologie und Therapie, Strumpell, M.D., 1892.
Der Hypnotismis. Wetterstand, M.D., 1891.
Jahrbucher der Hamburgischen Stdatskrankenanstaten. Bds. 2 and 3, 1894-96.

TRANSACTIONS AND REPORTS.

Æsculapian Society, Vols. 3, 4, 5, 6, 1897.
Association of American Physicians, Transactions, 1899.
American Surgical Association, Transactions, 1899.
American Orthopedic Association. Vol. xii., 1899.
Colorado State Medical Society, 1899.
Clinical Society of London, Transactions, Vol. XXXII., 1899.
Glasgow Hospital Reports, Vol. I,, 1898.
American Ophthalmological Society, 1899.
Maine Medical Association. Vol. III., 1899.
Michigan State Medical Society, Transactions, 1899.
Medical Society of London, Transactions, 1899.
Medical Society of the State of California, Transactions, 1899.
New York Pathological Society, 1899.
Pathological Society of London, Transactions, 1899

Wisconsin Academy, Transactions, 5 vols., 1899.
State Board of Health, Wisconsin, 7 vols., 1885-98.
" " " Iowa, 9 vols., 1881-97.
" " " Maine, 10 vols., 1886-97.
" " " Connecticut, 13 vols., 1882-98.
" " " Indiana, 10 vols., 1883-98.
" " " Ohio, 13 vols., 1886-98.
" " " Illinois, 1898.
" " " New Hampshire, 2 vols. 1895-98.
" " " Colorado, 1894.
" " " Delaware, 1899.
" " " Michigan, 6 vols., 1873-97.

NEW WORKS.

Allbutt's System of Medicine, Vol. 8, 1899.
Mechano-Therapy. A. V. Graftstrom, M.D., 1899.
Nervous System. L. F. Barker, M.D., 1899.
Diseases of the Eye. H. R. Swanzy, M.D., 1898.
Medical Diagnosis. J. H. Musser, M.D., 1899.
Sajous' Annual, 5 vols, 1899.
Practical Urinalysis and Urinary Diagnosis. Purdy, M.D., 1899.
Diseases of the Skin. Malcolm Morris, 1899.
Progressive Medicine, Vol. 4, 1899.
The Practitioner, London, 2 vols., 1898-99.
Index Medicus, vol. XXI., 1898-99.
A Guide to the Practical Examination of the Urine. J. Tyson, M.D., 1896,
Medical Diagnosis. L. Fenwick, M.D., 1897.
Physiology for Beginners. M. Foster, M.D., 1896.
Clinical Diagnosis. G. Klemperer, M.D., 1898.
Text-Book of Bacteriology. G. M. Sternberg, M.D., 1896.

PAMPHLETS.

G. C. Whipple, M.D., (3) ; G. Knopf., M.D.. (2) ; F. J. Shepherd, M.D., (30) ; A. Macdonald, M.D., (9) ; Massachusetts General Hospital, (24) ; C. Denison, M.D., (2) ; R. Macneill, M.D., (1) ; Editors of the Montreal Medical Journal (29).

XIIIth INTERNATIONAL CONGRESS OF MEDICINE.

Paris, 2—9 August, 1900.

The French Executive Committee begs leave to notify the Canadian medical profession of the conditions of admission to the Congress and of inscription in the various sections.

1. Conditions of Admission to the Congress :

Membership will be granted.

(*a*) To all doctors who apply for membership.

(*b*) To the representatives of science who shall be presented by the Canadian Committee.

Members will receive their cards on forwarding five dollars to the Treasurer-general of the Congress, Dr. Duflocq, 64 rue de-Miromesnil, Paris, or to Dr. J. T. Loranger, 999 St. Denis street, Montreal, or to Dr. F. N. G. Starr, Biological Department Queen's Park, Toronto, Ontario.

This card will be required for admittance and to secure for the members the advantages reserved for them.

In forwarding payment, members should write their name and profession plainly and legibly, and subjoin their visiting card. They will also indicate the special section to which they intend to belong.

2. Conditions of Inscription of Communications in the Section :

Members intending to present communications to a special section should send to the secretary of his section the title and the résumé of his communication before the 1st of May, 1900.

In order to facilitate this formality the Executive Committee gives as follows the names and addresses of the secretaries of the various sections at Paris.

1. Comparative Anatomy—Auguste Pettitt, 6 rue Saint-Andre-des-Arts.
2. Descriptive Anatomy—Rieffel, 7 rue de l'Ecole-de-Médecine.
3. Histology and Embryology—Retterer & Loisel, 15 rue de l'Ecole-de-Médecine.
4. Physiology, Biological, Physick and Chemistry—Dastre à la Sorbonne ; Gley, 14 rue Monsieur-le-Prince ; Weiss, 20 avenue Jules-Janin.
5. General Pathology and Experimental Pathology—Charrin, 11 avenue de l'Opéra ; Roger, 4 rue Perreault.
6. Pathological Anatomy—Letulle, 7 rue de Magdebourg.
7. Internal Pathology—Rendu, 23 rue d'Université ; F. Widal, 155 Boulevard Haussman.
8. Infantile Pathology—Marfan, 30 rne la Boétie.
9. Therapeutics—Gilbert, 27 rue de Reme.
16. Pharmacology—Chassevant, 70 rue de Rennes.
11. Materia Medica—Chassevant, 70 rue de Rennes.
12. Neuropathology—P. Marie, 3 rue Cambacérès.
13. Pschyatria—Ant. Ritti, Asile de Charenton. Seine.
14. Dermatology and Syphyligraphy—G. Thibierge, 7 rue de Surène.
15. General Surgery—Walther, 21 Boulevard Haussman.
16. Surgery of Infancy—A. Broca, 5 rue de l'Université ; Villemain, 58 rue de Notre-Dame-des-Champs.
17. Urinary Surgery—Desnos, 31 rue de Rome.
18. Ophthalmology—Parent, 26 avenue de l'Opéra.
19. Laryngology, Rinology—Lermoyez, 20 bis rue La Boétie.
20. Otology—Castex, 30 avenue de Messine.
21. Stomatology—Ferrier, 39 rue Boissy d'Anglais.
22. Obstetrics—A. Barr, 122 rue La Boétie ; Champetier de Ribes, 28 rue de l'Université.
23. Gynecology—Hartmann, 3 Place Malesherbes.
24. Legal Medicine—Motet, 161 rue de Charronne ; Thoinot, 8 rue de l'Odèon.
25. Military Medicine and Surgery—Catteau, Ministère de la Guerre.
26. Naval Medicine—Laugier, Ministère de la Marine.
27. Colonial Medicine—Kermorgant, Ministère des Colonies.

NEW BOOKS, ETC., RECEIVED AND NOTED.

H. K. Lewis, London.

Letter, Word and Mind Blindness. By James Hinshelwood, M.A., M.D., F.F.P.S., Glasgow, 1900.

Lea Bros. & Co., Philadelphia and New York.

Diseases of Women. A Treatise on the Principles and Practice of Gynæcology for Students and Practitioners. By E. C. Dudley, A.M., M.D. Second Edition. 1899.

A Manuel of Modern Surgery for the Use of Students and Practitioners. By John D. Roberts, A.M., M.D. Second Edition, 1899.

Bacteriology in Medicine and Surgery. By W. Hallock Park, M.D,, assisted by A. R. Guerard, M.D. 1899.

A Practical Treatise on Diseases of the Skin, for the Use of Students and Practitioners. By James Nevins Hyde, A.M., M.D., and Frank Hugh Montgomery, M.D. Fifth and Revised Edition. 1900.

The Principles of Treatment and Their Application to Practical Medicine. By J. Mitchell Bruce, M.A., M.D., F.R.C.P. 1900.

Progressive Medicine. Volume IV. December, 1899.

A Manual of Modern Surgery. By John B. Roberts, A.M., M.D. Second Edition. Revised aud enlarged. 1900.

W. B. Saunders, Philadelphia.

Essentials of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A.M., M.D. Third Editian. Revised and Enlarged. 1899.

Saunder's Question Compends—Essentials of Anatomy. By Charles B. Nancrede, M.D. Sixth Edition. Thoroughly Revised by Fred. J. Brockway, M.D. 1899.

An American Text-Book of Surgery for Practitioners and Students. Edited by William W. Keen, M.D., LL.D., and William White, M.D., Ph.D. Third Edition. Thoroughly Revised. 1899.

A Text-Book of Embryology for Students of Medicine. By John Clement Heisler, M.D. With 190 illustrations, 26 of them in colours. 1899.

Lectures upon the Principles of Surgery. By Charles B. Nancrede, A.M., M.D., LL.D. With an Appendix containing a résumé of the principal views held concerning Inflammation. By William A. Spitzley, A.B., M.D. Illustrated. 1899.

Diseases of the Eye. By Edward Jackson, A.M., M.D. 1900.

A Text-Book of Diseases of Women. By Charles B. Penrose, M.D., Ph.D. Third Edition. 1900.

A Manual of the Practice of Medicine prepared especially for Students. By A. A. Stevens, A.M., M.D. Fifth Edition. Revised and Enlarged. 1898.

D. Appleton & Co., New York.

Notes on the Modern Treatment of Fractures. By John B. Roberts, A.M., M.D. With 39 illustrations. 1899.

Operative Surgery. By Joseph D. Bryant, M.D. 1899.

E. B. Treat & Co., New York.

An Atlas of the Bacteria Pathogenic in Man. By Samuel G. Shattock, F.R.C.S. With an introductory chapter on Bacteriology ; its practical value to the general practitioner. By W. Wayne Babcock, M.D. Sixteen full page Colored Plates. 1899.

Ballaire, Tindall & Cox, London.

Dictionnaire des Termes de Medecine, Francais-Anglais. Par H. de Meric. 1899.

T. Fisher Unwin, London.

Hermann Ludwig Ferdinand von Helmholtz. By John Gray McKendrick, M.D., LL.D. 1899.

The Author, Chicago.

Brain in Relation to Mind. By J. Sanderson Christison, M.D. 1899.

The F. A. Davis Company, Philadelphia, New York and Chicago.

The Surgical Diseases of the Genito-Urinary Tract. Venereal and Sexual Diseases. By G. Frank Lydston, M.D. 1899.

Transactions of Societies.

The Transactions of the Society of Anæsthetists. Volume II. London, 1899.

Clinical Reports of the Rotunda Hospitals. By R. D. Purefoy, F.R.C.S.I. (Master), and R. P. R. Lyle and H. C. Lloyd, Assistants. Dublin. 1899.

Transactions of the American Surgical Association. Volume XVII. Edited by DeForest Williard, A.M., M.D., PhD. 1899.

Reprints.

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HISTORY OF GONORRHŒA.

BY

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In a field of mere facts and dates one may be excused if he be brief, even to the point of mere recital; and in the merely historical side of such a subject there is probably much less profit than in the actual discussion of its practice; especially since opinion and theory are so prevalent, and actual facts of history so scarce.

If one be determined to find in the historical evidence very early mention of this disease, it is possible; and if one approach the subject from the opposite standpoint it is also possible to show great fallacies in the early evidence. Many authors are of the opinion that certain Biblical passages mentioning "running issues" and similar affections, refer to gonorrhœa; but the evidence is of no greater weight than that which goes to support the contention of one modern curiosity-hunter who has demonstrated—to his entire satisfaction—that the lamentations of the Psalmist in one well known passage clearly proved that he was afflicted with "acute tonsillitis." I do not state this from any idea of exciting a smile but rather to show to what really ludicrous ends a man's hobby-horse may lead him—or rather gallop him.

It is, however, interesting to note that the first history of this disease which merits any consideration was written 4,500 years ago; and that thirty-six centuries of silence intervened. Such as this can scarcely be called even hearsay evidence.

Passages are quoted from Herodotus and Hippocrates, which may be considered as evidence of venereal disease, but again the evidence is of the slenderest. Celsus, again, if he observed gonorrhœa, has given a description that is sadly lacking in the accuracy that marks his work Milton—not of that ilk—from whom I shamelessly steal most of my

facts for this résumé, certainly seems reasonable when he says that gonorrhœa could scarcely have been well known and recognized among the Romans, since Horace, Juvenal and Persius make no mention of it; for on similarly delicate subjects they fearlessly pronounce. Martial, again, scarcely through modesty, has not even hinted at it.

One eager seeker declares to have found in poor old Cicero evidence of his acquaintance with the disease; school boy memories of Cato Major de Senectute fail to recall a single line that would render it likely that Cicero would have been so mundane.

Legions of writers, since the year 950, could be named, who have dealt with gonorrhœa so called; but so great uncertainty existed as to whether or not it was the true condition (and some of these plainly have confused the condition with spermatorrhœa) that the evidence must in great part be rejected. Doubtless, however, gonorrhœa did exist at this time, and with the ravages of syphilis in the fifteenth century it either lessened in its extent or was overshadowed by the importance of the other. But about 1500, when syphilis had somewhat spent its severity, gonorrhœa again comes into prominence. In 1504, Catancus gave the first really accurate description of the disease and its contagious nature; he was followed by many other writers during the next forty years, after which again history is for a time silent.

Paracelsus classed gonorrhœa as a variety of syphilis, an error which passed unchallenged until the protest of Cockburn in 1728—and which lived until the present century. Previous to the period of confusion, as far back as 1740, Astruc pointed out the non-identity of the two conditions, and his contention was upheld in the latter half of the century by Balfour and Benjamin Bell. From 1770 onwards the Edinburgh school taught with no uncertain voice that gonorrhœa was a disease '*sui generis*.' This teaching began to become general in London only about 1805, but, notwithstanding, it is interesting to note that as late as 1829 mercury was given for gonorrhœa in some of the London hospitals. Finally, Ricord in a publication, the date of which I have not been able to ascertain, clearly demonstrated the distinction between gonorrhœa and syphilis. For many years, gonorrhœa and hard and soft chancres, had been jumbled together, and errors were copied from book to book; but in 1852, Bassereau proved conclusively the distinction between the hard and soft chancre, and from that time, though there existed some doubt as to the syphilitic or non-syphilitic nature of the chancroid, there has been no confusion between gonorrhœa and syphilis.

No distinct mile post stands out on the road until 1870, when Neisser of Breslau announced that he had found an organism existing in gonorrhœal pus; and that it was identical with the organism of ophthalmia neonatorum. Immediately a host of observers followed

and confirmed his work; with the result that, since that time, the presence of the gonococcus can be decided as "an immoral certainty."

But here again a new field opens up, for the supposition now was that gonorrhœa was entirely a local disease; although the clinical connection of gonorrhœa and arthritis had long been familiar. At the time of writing I have mislaid all the notes made as to the extension of knowledge regarding the gonococcus, and its appearance elsewhere than the urethra. I am sorry that I can trust my memory for neither observers nor dates; but this is practically history of to-day.* Let it suffice to say, that the presence of the gonococcus has, within the last decade, been determined in most of the serous cavities of the body; its presence in peritonitis, arthritis, iritis and salpingitis have been again and again demonstrated; more rare, but as undoubted, is its presence in the pleura; and lastly, it has been demonstrated not only in abscesses in the muscle of the uterus, doubtless by direct extension, but also in at least one case of multiple abscesses of the body muscles.

It is safe to predict that "the end is not yet."

* Dr. Macrae was called away from Montreal before the completion of this contribution to the Discussion on Gonorrhœa at the Montreal Medico-Chirurgical Society he having been appointed Lieutenant of Artillery in the Second Contingent to the Cape.

ACUTE GONORRHŒA AND ITS COMPLICATIONS IN THE MALE.*

BY

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While purulent inflammations of the urethra, running a definite course and frequently complicated by extension of inflammatory processes by contiguity to other parts, are due to other causes than that producing gonorrhœa, nevertheless, it would seem that the commonest cause of urethritis is due to a more or less pure culture of the gonococcus of Neisser ; and it would seem, from a review of the literature of the subject, that the chief difficulty lies in being able readily to differentiate this coccus from others which closely resemble it.

Gonorrhœa is a contagious, specific inflammation of the mucous membrane of the genito-urinary tract. Purulent discharges occurring during the course of typhoid fever or during the secondary stage of syphilis are not unknown and are the result of other irritants than gonococci.

Clinically, we meet with the disease in two distinct forms :—(1) The acute or inflammatory gonorrhœa, and (2) the subacute or catarrhal. Either may be the result of immediate or mediate contagion.

The period of inoculation is very variable being, if we can believe our patients, from a few hours to three weeks, and apparently depending upon the virulence of the infection and the vital resistance of the mucous membrane. The average duration, however, is from three to five days.

The earliest symptoms of gonorrhœa are :—

Sense of heat and itching in the glans.

Tickling in the meatus.

Feeling of increased tension in the penis, followed promptly by,

Swelling of the meatus.

Appearance of a thin, greyish, watery discharge.

Ardor urinæ.

Frequent micturition. And, according to the extension of the inflammatory process backwards into the canal and deeply into the submucosa, vesical tenesmus and chordee. The discharge at the beginning and at the declining stage is most watery and contains fewer gonococci as a rule. Occasionally, one sees along with the above symptoms marked œdema of the glans, foreskin, and distinct evidences of

* Being part of a Discussion on Gonorrhœa at the Montreal Medico-Chirurgical Society, January 5, 1900.

lymphangitis of the penis, not necessarily associated with more intense urethral symptoms.

Loss of appetite, general malaise, and a haggard appearance will depend largely upon the character of the nights. Untreated, and often when overtreated, the disease runs a course of from five to ten weeks. Relapses are common and would seem to be dependent upon many causes. Finally, without involving the deep urethra the inflammation may become chronic.

While the above group of symptoms, in varying degrees of intensity, constitutes the clinical history of an attack of acute inflammatory gonorrhœa, a thin watery discharge coming on at very varying intervals may constitute the chief, if not the only symptom of a subacute gonorrhœa, with occasionally slight ardor urinæ, but very rarely chordee. These last attacks are frequently seen in those who in years gone by have had the more severe symptoms, and it would seem to be a debated point whether the mildness of the symptoms depends upon a certain degree of immunity acquired by the mucous membrane, or whether it is in reality an infection by attenuated gonococci, which a healthy urethra would have rendered inert.

The complications which may arise in acute gonorrhœa and not rarely in subacute gonorrhœa even when carefully treated, are balanoposthitis, with phimosis or paraphimosis, folloculitis and peri-urethritis with their complications, abscesses, and cowperitis, lymphangitis, lymphadenitis, cavernitis, posterior urethritis, acute prostatitis, rarely cystitis, vesiculitis and epididymitis. The more serious ascending inflammation, such as ureteropyelitis, and the acute suppurative nephrites occurring in the course of chronic gonorrhœa, are due to other pyogenic organisms. Rarely arthritis, pleuritis, endocarditis, peritonitis, ophthalmia or proctitis may occur as complications.

I should like just here to draw attention to the frequency of a previous history of gonorrhœa in those the subject of prostatic and vesical tuberculosis ; at least in most of the cases which have come under my own observation this is true.

Acute posterior urethritis is probably the commonest complication of gonorrhœa and is due to direct invasion from the anterior urethra. Strong injections, excessive bodily exercise and over-indulgence in stimulants, etc., are important predisposing factors in its production. It may become manifest during the second, but more frequently during the third week. Frequent, urgent, and painful micturition ushers in the attack ; perineal pain, nocturnal pollutions, vesical tenesmus, and occasionally, retention may follow. The severity of each of the symptoms depends upon the intensity of the inflammation and the virulence of the infection. In the mildest cases pus in the second of a two-glass

specimen with increased frequency of urination may constitute the only symptoms.

The only other complication to which I will refer in detail is spermato-cystitis, and this because it is comparatively common and frequently overlooked. It may run an acute but more frequently a chronic course. It is frequently mistaken for prostatitis. In the acute variety persistent pain in the perineum, stabbing in character, made worse on urinating or defæcating, and radiating to the anal and crural regions, frequently felt over the sacrum or in the hypogastrium, is present. Nocturnal pollutions are frequent and are often red in colour. Rectal examination will reveal a tender, nodular, sausage-shaped mass extending upward from the prostate. Examination is best made in the stooping posture with the bladder full. In the chronic form the symptoms are much less acute, though such patients rapidly develop neurasthenic symptoms which are exceedingly difficult to relieve.

Treatment. I shall not attempt to give even a résumé of the methods of treatment in vogue at the present day for the disease, but shall confine myself to those methods which I have found most serviceable.

So far as prophylaxis is concerned, immediate urination with thorough washing with frequently changed water and a mildly antiseptic soap, with or without a copious, weak, antiseptic injection, would, according to the testimony of some, prove thoroughly efficient.

So far as abortive methods of treatment are concerned, they have in my hands proved valueless unless the cases presented themselves very early. In two cases during the last year where symptoms indicative of a fresh infection, as judged by symptoms in previous attacks, were present, injections of nitrate of silver, 20 grains to the ounce, produced a profuse, purulent discharge which contained gonococci. The discharge in each case rapidly subsided by rest in bed and the use of hot fomentations and weak astringent injections of zinc sulphocarbolate and hydrastis. I do not as a rule practice the treatment simply because cases suitable for it do not present themselves.

Thorough cleanliness of the parts and of the patient's hands and instruments, I believe, helps to shorten the duration of the disease and especially prevents complications. Bodily rest, low diet, avoidance of stimulants, careful regulation of the bowels, and cool sleeping rooms are of the utmost value from the outset. I have on several occasions seen an acute attack of gonorrhœa get perfectly well during an attack of typhoid fever, but, on the other hand, I have on two occasions seen the symptoms return and in one case epididymitis occur during convalescence and while the patient was still in bed.

The method of treatment which has proved most satisfactory, and which I have practiced exclusively for the last two years, has been by

copious irrigations with weak antiseptic solutions; at first with bichloride and latterly with permanganate of potash, using these in large quantities and hot, at a temperature of at least 115° F. and frequently 120° F. These I applied by means of rubber catheters, glass catheters, special irrigators and meatus nozzles. It matters but little, I think, which is used so long as the irrigation is thorough and frequently repeated. Preferably I use the glass catheter. Within the last six months each irrigation has been followed by an injection of protargol, ½ to 2 per cent., which is retained for fifteen to thirty minutes. If possible, irrigation should be commenced at once and repeated twice daily for the first four or five days, then daily for a week or more, so long as the discharge remains purulent and contains gonococci. When the discharge is thin and serous I substitute an astringent salt, usually combined with a vegetable astringent, to be used by the patient until the discharge ceases. This method, where it could be faithfully carried out, has been most satisfactory; the time required by the physician as well as by the patient in my opinion militates against its adoption. Where instructions have been given the patient, depending upon him entirely for carrying them out, the results have been no better than by much simpler methods, at least, that has been my experience.

In most of the patients the alkaline diuretics combined with an anodyne, and occasionally in robust patients with an arterial sedative, have been employed in the initial stage to relieve the ardor urinæ. Salol in 10 grains three times a day, I believe, is an important drug in the treatment of gonorrhœa, and particularly at the end of the first week; and combined with cubebs in a cachet materially helps to diminish the pus during the second week. Copaiba and sandal wood, in my hands, have been efficient only in inducing gastric trouble without benefiting the patient.

In anterior urethritis when, in spite of prolonged use of astringents of various strengths and combinations, the morning drop or gonorrhœal threads persist, exposure of the urethra invariably shows granular patches or areas showing inflamed follicles which more or less readily yield to pencilings with rapidly increasing strengths of nitrate of silver followed by the application of 25 to 40 per cent. borogyceride.

Posterior urethritis, when acute, I have treated by rest in bed, hot hip baths, application of leeches to the perineum, hot irrigations if possible, and injections of protargol solution. Emptying the bowels twice daily by tepid saline solutions and urinating in a hot bath does much to relieve the patient's suffering. Rest must be secured at night if need be by morphine hypodermically or an opium suppository. Salol

and pulv. ipecac co. in cachets, I believe, do much to relieve vesical tenesmus.

In the chronic stage, irrigations of abundant hot saline solutions followed by instillations of increasing strengths of argentic nitrate or, where this is not well borne, by nitric acid, beginning with a drop to the ounce, is often serviceable. And here the use of the urethroscope is invaluable. By it you can determine the point or points where inflammation is localized, and having noted these carefully by rectal touch, instillations with an Ultzman's syringe can be readily carried daily, or every second or third day as acquired, to the desired part.

In acute spermato-cystitis the treatment suitable for acute prostatitis or acute posterior urethritis would be necessary. In the chronic form Fuller has shown that cures may be secured by emptying the contents of the vesicle into the posterior urethra by pressure exercised through the rectum, the bladder and urethra being subsequently carefully irrigated.

CHRONIC GONORRHŒA IN THE MALE.*

BY

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To deal with the subject of stricture of the urethra, its causes, development, symptoms, treatment, complications, and sequels in the time at my disposal is quite impossible. Neither is it proper for the opener of a discussion to set forth any peculiar views that he may hold, but rather to deal with the subject in a general way under headings that are suggestive and debatable.

Stricture is a narrowing of the urethra due, and secondary to, disease of its walls. Stricture, whether gonorrhœal, traumatic, or congenital, is of slow growth, requiring months and often years for its full development. Small cell infiltration takes place into the submucous layer. This may probably sometimes be absorbed but as a rule it slowly and gradually becomes organized into tissues more or less dense and fibrous. It is for all intents and purposes scar tissue and tends to contract. It is this contraction of scar tissue that narrows the tube, that lessens the calibre of the urethra. The mucous membrane also is altered; at first in a condition of catarrhal inflammation, it becomes later on pale and smooth and dense, rarely rough. The interference with the normal function of the canal and circulation through its vessels depends upon its extent in length and depth.

If this was the beginning and the end of the pathology the condition would be comparatively simple; it is, however, only the beginning. The obstruction offered to the outflow of urine leads to alteration of the parts behind, commencing at the site of the stricture and ending at the kidney, these alterations in time giving rise to systemic pathological conditions of the most serious import. The urethra behind the stricture first becomes dilated, then the bladder, the ureter, and lastly the pelvis of the kidney. If no bacterial infection occurs a simple hydronephrosis may result.

The next great factor to be considered is the infection of the altered walls of these important organs. The bladder does not completely empty itself and its resisting powers are lessened. While it is probably true, as pointed out by Guyon in 1888, that the normal bladder is not easily infected, it is also a matter of daily clinical experience that a dilated bladder not containing residual urine is most vulnerable. If

* Being part of a Discussion on Gonorrhœa at the Montreal Medico-Chirurgical Society, January 5, 1900.

the pelvis of the kidney becomes altered it at the same time becomes less resistant to infection.

The primary and most obvious result of stricture is undoubtedly its obstructive action, and this in itself may indeed prove serious enough; but the second and very important result of stricture is the alteration in the urinary organs, rendering them the more easily infected by pathogenic organisms.

The source of infection may doubtless be the intestinal canal, the lungs, the bones, as in osteomyelitis or other septic focus; but only too often do evidences of infection follow soon after the introduction of instruments into the bladder through the urethra. These are the two most frequent roads of infection, the blood and the urethra. When the infection is through the blood the kidney is almost invariably first involved and the intestine the most common source. This view is that advocated by Rovsing of Copenhagen and receives valuable confirmation in the experiments of Posner and Lewin, who found that on ligation of the intestine in animals, microbes from the intestine passed into the urine. Other sources of infection than through the urethra or blood stream are contiguous abscesses in the peritoneal cavity or prostate. These, by perforation into the urinary canal, may cause infection. I emphasize these points because later I shall urge that by far the most common source of infection is through the urethra and by the physician or surgeon: and before doing so it is only right to make clear the other sources of infection that the surgeon is powerless to remove. The cystitis or bacteriuria may take origin in the kidney, it being infected through the blood stream; but only too seldom can we make this point quite clear.

I think that we all must and should admit to ourselves that infection is as a rule coincident with urethral instrumentation. I say this for two reasons. In the first place it is a part of the plain truth, and secondly it is a good creed to believe in. A man feeling his responsibility is more likely to observe all known precautions that one who does not. I am not prepared to say that infection can always be avoided, but it generally can. The sterilization of the instruments to be used and the operator's hands should of course be observed by all, but the sterilization of the urethra is perhaps not always possible. It should always be attempted. It always contains germs, in the anterior part at any rate. The accessible parts should be carefully washed with soap and water and then with sublimate solution, 1 to 2000, or a 2 per cent. solution of carbolic acid. The urethra itself should then be washed out by means of a syringe or irrigator. For this purpose I am in the habit of using a solution of permanganate of potash, one-half of one

per cent., or a saturated solution of boracic acid. By means of a long narrow glass nozzle or a small sized rubber catheter, that part of the urethra anterior to the anterior triangular ligament can be well washed by a stream of antiseptic solution flowing outward. There is nothing I do with greater hesitancy that introduce for the first time a catheter into a distended bladder, whether the distention arise from prostatic or stricture obstruction. Explain it how we will, we constantly see old men using rough, dirty catheters, that they carry in their pockets and never think of washing, and passing turbid, odorous urine, with impunity it is true, but they either have acquired immunity or their urethral and vesical lining is invulnerable to attacks of ordinary bacteria.

Infection of the bladder and cystitis having occurred in spite of all precautions or as a result of no precautions being taken, the necessity of overcoming the narrowness of the urethra is all the more pressing. I do not here need to go into the bacteriology of cystitis. The different bacilli found in cystitis, their peculiar properties, their classification into two distinct groups, the urea decomposing and nondecomposing, are well described by Rovsing in his book "Klinische und Experiment alle Untersuchungen über die infektiösen Krankeiten der Harnorgane," and by Mansell Moullin in his book "Inflammations of the Bladder," as well as in numerous magazine articles, and I will not discuss them at present.

The next point I want to draw attention to is the infection of the kidney from the bladder. Perhaps I may say that this is the all important point in the sequelæ of urethral stricture. A knowledge of its possibility forces us to use due diligence in the relief of cystitis.

The infection spreads to the kidneys by three routes, the lymphatics, the ureters, and the blood vessels. I mention lymphatics first because I think they are the most frequent route. They carry the infection through the capsule into the kidney. I am sorry that pathological specimens are ruled out to-night as we have some very interesting specimens in the Montreal General Hospital of this condition. Only a few days ago there were removed at the autopsy two kidneys with multiple small abscesses. The history of this case is interesting and it illustrates the natural history of urethral stricture. The man who died of this multiple suppurative nephritis told us that when a boy only twelve years of age he found it necessary to pass urine very frequently. This frequency of micturition was a few years later accompanied by a certain discomfort during the act. Twelve years ago, he tells us, he was operated upon for stricture but that no after-treatment was kept up. When he was admitted to the hospital he had a stricture a little in front of the bulb through which a number six catheter could be passed. The

stricture felt very hard and dense and was annular. He micturated very frequently and complained of some pain during and after the act. The urine was turbid, alkaline, ammoniacal, and very offensive. The infection was mixed. In this case I divided the stricture and drained the bladder through the perineum. This was followed by an improved condition of urine, the cystitis was much relieved, but the relief came too late to save the kidneys. In this case the autopsy showed the cystitis to be local, limited pretty much to the trigone. The mucous membrane of the ureter was not materially altered, nor the pelvis of the kidney. The abscesses were all through both kidneys and the channel of infection was regarded by Dr. Wyatt Johnston to be probably the lymphatics.

When the infection passes up through the ureter, the pelvis is naturally the first to be infected, just the reverse of what occurs when the infection is brought to the kidneys through the lymphatics or blood channels. To sum up, then, the natural history of stricture is narrowing of the urethra, obstruction to the outflow of urine, dilatation. behind the stricture, of the urethra, bladder, ureters, pelvis of the kidney and hydronephrosis. When infection occurs, then follow cystitis, ureteritis, suppurative nephritis, septicæmia and death.

The symptoms of stricture are well known; they are difficulty in micturition, slowness in starting the stream, lack of projecting force in the stream so that it falls on the boots or trousers, and in extreme cases micturition in the sitting posture.

A definite diagnosis is made by the use of instruments. In the passing of instruments the greatest possible care must be exercised to prevent infection. The instruments and hands of the operator should be thoroughly sterilized and the urethra in front of the anterior triangular ligament washed out by the use of a plentiful supply of an antiseptic solution introduced to the deeper parts by means of a small, soft rubber catheter and allowed to flow outwards.

In regard to the method of treatment to be adopted, I am strongly in favour of dilating all dilatable strictures; and nearly all gonorrhœal strictures behind the peno-scrotal angle are dilatable by the interrupted or continuous method. In a general way, I reserve for cutting gonorrhœal strictures of the pendulous urethra, traumatic stricture and congenital stricture of the urethra. I have not excised any traumatic stricture because I have not met with any cases adapted to this method of treatment. In one case, recently, of traumatic stricture involving fully two inches of the urethra, I found it necessary to lay open the stricture area by dissection, and then to form a new floor, as in the operation for hypospadias. The result was entirely satisfactory.

Cock's operation, or the opening of the urethra behind an impermeable stricture and therefore without a guide, I have performed only in cases of extravasation of urine. I have performed this operation in several such cases. In all of them the emptying of the bladder has been accomplished, but the future of such patients depends upon the extent and virulence of the infection of the tissues and the recuperative power of the patient. This complication frequently occurs in old men with diseased kidneys and is often fatal.

GONORHŒAL ARTHRITIS.*

BY

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It is not my intention to take up the subject of gonorrhœal arthritis in a systematic manner, but simply to give an account of some of the more important features of a series of forty-eight cases that have been under observation in the Royal Victoria Hospital during the past four years. I am indebted to Dr. Cushing for the following very careful analysis of these cases.

During the past four years, forty-eight cases of gonorrhæal arthritis have been treated in the wards of the Royal Victoria Hospital. This number only includes those cases in which the diagnosis was certain and the patient remained in the hospital for a course of treatment.

The following statistics have been prepared from the case reports and special charts of these cases. These have been kept with more than ordinary care and accuracy for the purpose of observing the results of treatment by the Tallerman-Sheffield hot air apparatus.

Of the forty-eight cases only six were women. All the cases were young adults, the average age being about 30 years. The only exception was an old man of 69 years.

An attempt was made to ascertain whether a previous rheumatic history predisposed to involvement of the joints in the events of a subsequent gonorrhœa, but no such relation could be made out. Only two asserted that they had suffered from inflammatory rheumatism in early life and one from chorea. Only three had a decidedly rheumatic history. It was, however, clearly shown that one attack of gonorrhœal rheumatism predisposed to another in case of a fresh infection of the urethra, as no less than 15 cases *i.e.*, nearly one-third of all, have a history of previous attacks of gonorrhœal arthritis.

Only four cases gave a history of exposure, overwork, or intemperance, to account for the extension of the trouble from the urethra.

As to the gonorrhœa, it is impossible to draw any general conclusions ; to judge from these cases arthritis is as liable to follow a mild attack as a severe one. Twenty-six claimed that it was their first attack of gonorrhœa. Some of the others had had repeated attacks of gonorrhœa before arthritis occurred. As to the stage of gonorrhœa, there is the same difference. Eighteen cases occurred in the acute stage be-

* Being part of a Discussion on Gonorrhœa at the Montreal Medico-Chirurgical Society, January 12, 1900.

fore the end of the third week of the discharge, twenty-two occurred later in the disease, and in eight cases, mostly women, it was impossible to ascertain the stage of the urethritis. In five cases the arthritis occurred more than a year after the onset of the gonorrhœa, which had become a chronic gleet.

The urethral condition of the patients while in the hospital is of interest. Although most of the patients entered the hospital late in the disease *e.g.*, twenty-four entered more than a month after the onset of the arthritis, almost all were still suffering from urethritis in some form. In twenty-five, there was acute or subacute gonorrhœa with visible discharge; in fourteen, some form of chronic urethritis or stricture; and in only four was the genito-urinary system found to be normal. Possibly this continuance of inflammation at the source of infection will account for the numerous relapses which characterized many cases.

The cases differed widely in the mode of onset. In four cases, the onset was like that of any acute fever, the arthritis only becoming a marked feature after two or three days. Ten cases were characterized by a sudden onset of pain and inflammation in one or more joints, generally occurring at night. In the remaining thirty-four the onset was more or less gradual with pain in some one joint, gradually becoming worse, and usually extending to other joints in succession, but not subsiding in the first joints as others were involved.

The clinical forms of the disease differed greatly but it was difficult to make any classification, as no sharp line of distinction could be drawn. The commonest form was what might be called the polyarthritic; of this there were twenty cases. These resembled subacute rheumatism. Inflammation began either suddenly or gradually in one joint, and extended to others with moderate fever and constitutional disturbance. Most of these cases when admitted early did well, but at least half were left with partial ankylosis of some of the joints involved. There were twelve chronic cases, mostly with ankylosed joints, two having hydrarthrosis. These cases were only slightly benefited by treatment. They all began as polyarthritic or monarthritic forms. Of the latter there were six acute cases in the hospital. These resembled the first group except that only one joint was involved, or else the rheumatism subsided in other joints in a few days and remained in the one joint. Of these six, three were cured, but three were left with more or less damaged joints.

There was a group of seven cases where the infection was confined to the heels and soles of the feet without any joints being affected. These all did well but some were left with some pain on walking.

Lastly, there were three cases which might be termed septicæmic, marked with fever and grave constitutional disturbance with involvement of several joints.

As to the frequency with which the different joints were involved, taking all the cases together the knees were the most frequently attacked, being involved in twenty-nine cases. Next to this is involvement of the heel and plantar fascia, in eighteen cases. Then, in order, the ankles, the small joints of the feet, the elbows, the shoulders, the wrists, and the small joints of the hands. The joints least frequently involved were the vertebral, in five cases, the temporo-maxillary in four, the sterno-clavicular in three, and the thro-arytenoid in one case.

The complications were very few; the commonest was endocarditis. This was present in eight cases. In one the lesion was an old one and probably associated with a former attack of chorea. The remaining seven showed apparently recent affection of the mitral valve; in two, the endocarditis was noted to occur in the wards. Of these seven cases five were what is described above as polyarthritic, and two were septicæmic. There was no case of malignant endocarditis.

The next most common complication was iritis occurring in four cases and leaving adhesions in one. Conjunctivitis occurred in two cases. In these cases the secretion did not contain gonococci and no bad result was left. Phlebitis of the left femoral vein occurred in one case. All the above complications occurred in febrile cases with several joints involved.

Treatment and Results.—As a whole the results were unsatisfactory. Although no deaths occurred, only nine were discharged cured. Thirty-five were improved, and in four cases, all chronic ones, there was no improvement. Fully half the cases left the hospital with one or more joints so damaged that complete restoration was not likely to occur. One explanation for this poor showing is that but few cases entered the hospital early in the disease. Only four entered during the first week and twenty-four entered more than a month after the onset. All the nine cases cured entered the hospital early in the disease. Of these, four were of the polyarthritic type, one monarthritic, and in two the heels and plantar fascia only were involved. The average duration of treatment in all cases was thirty-four days.

As to the details of treatment,—all acute cases were treated with strict rest in bed and low diet. As has been stated above, cases treated thus ultimately did better than those cases which entered late in the disease. No remedy used internally was found to be of much value. Salicylates were given in full doses in twelve cases, but in no case was any marked reduction of temperature or relief of pain noticed Salol,

potassium iodide and alkaline mixtures were also given without any special result. Tonics were given in some of the chronic cases with some improvement to the general condition.

Hot air baths by the Tallerman-Sheffield apparatus were used in thirty-six cases, in some cases in combination with other modes of treatment. By this apparatus the affected joint is exposed to dry air heated to about 300° F. for about half an hour. This is repeated daily or every second day. Under this treatment the general condition of the patient was always noted to improve though this may have been due to the improved hygiene of hospital life. There was an average gain in weight of about one pound a week. In practically all the cases of mild or subacute arthritis the baths caused marked relief of pain and greater freedom of movements for the time being. The action could not be termed specific as the majority of cases were left at the end of three or four weeks treatment with some stiffness of the joints and pain on exertion, but certainly the results were better than those obtained by ordinary local measures. In chronic cases, the relief of pain was also a marked feature in almost all cases. In some cases of partial fibrous ankylosis, there was increased mobility, but in half the cases there was none. The two cases of hydrarthrosis were not benefitted.

As to other local measures, hot fomentations were used in most acute cases. They afforded great relief of pain in all cases. In four cases where only one joint was involved, fixation by splints was found to afford greater relief than fomentations. Blisters were used in some more chronic cases, and in some are said to have relieved the pain but do not seem to have any other action. Painting with iodine was also used but with no good results whatever. Massage in some of the chronic cases was found to give increased mobility.

GONORRHŒA IN THE PREGNANT FEMALE.*

BY

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It is now pretty generally admitted that gonorrhœa may cause painful and troublesome affections of the vulva and its glands, the vagina, the rectum, and the genito-urinary system. The infective process may ascend and invade the uterus, the adnexa and the peritoneum. It may derange menstruation, may seriously complicate pregnancy, often causing abortion, may set up febrile disturbances in the puerperium, which may prove dangerous or even fatal, and after weary months may leave the woman with pus-tubes or other local conditions curable only by operation. It may wholly change the sexual life of a woman, rendering her sterile and incapable of normal sexual functions.

It is only of recent years that we have begun to realize what an important part the uterus plays in the gonorrhœal process. There is still a difference of opinion among the best authorities :—(1) as to the frequency of gonorrhœa *in utero* ; (2) as to the way in which the infective process spreads ; (3) as to whether clinical signs suffice for diagnosis, or whether a bacteriological examination for gonococci is always necessary, and finally, (4) as to whether the diseased endometrium should be treated vigorously or should be left at peace. These disputed points cannot be settled satisfactorily until we have determined positively the nature of the infective agent and the way in which it is spread.

Are the remote symptoms of gonorrhœa in the uterus, the adnexa, and the peritoneum, caused by gonococci, and by gonococci only? Must gonorrhœa be demonstrated in pus collections presumably of gonorrhœal origin, in order that their gonorrhœal character may be affirmed? Or, may the presence of a gonotoxine, which long out-lasts the gonococci, explain the occurrence of pus collections in which no living gonococci are found ? Without going into details, suffice it to say, that it has been proven that gonotoxine determines in animals and man inflammation and suppuration at the point of application, whether it be in subcutaneous cellular tissue, the eye, the pleura, the uterine mucosa, the peritoneum, or the urethra.

Various explanations have been given of the phenomena of chronic gonorrhœal infections. Wassermann holds that although no gonococci

* Being part of a Discussion upon Gonorrhœa at the Montreal Medico-Chirurgical Society, January 12, 1900.

may be found in the pus, they may be present, nevertheless, in the walls of the tube, and that for a long time gonotoxine is formed, little by little, by the death or destruction of the gonococci, which multiply or perish as their environment changes. He assigns the chief rôle in chronic gonorrhœal infection to multiplication and degeneration of the gonococci, with the concomitant formation of gonotoxine.

During the past two years a Russian, Maslovsky, has been working at this subject in an experimental way, and the results of his observations appeared recently in the *Annles de Gynécologie et d'Obstétrique*, (Nov. and Dec., 1899). His views are worthy of attention, for they seem to explain some puzzling clinical conditions in a tolerably clear way. He says that gonococci act upon the body by means of toxines, which have a two-fold action, *local* and *general*. The *general toxic action* is shown by elevation of temperature, a loss of weight, and even by death. The *local* action, inflammatory and suppurative, manifests itself at the point where the toxine is applied. His experiments prove that gonotoxine is capable of producing an accumulation of pus in closed cavities, which augments progressively. For example, the inflamed tube, shut off from the uterine and abdominal cavities, is practically a closed sac; gonococci, carried by leucocytes to the walls of the tube, perish and form gonotoxine; the pus of the tube, containing, therefore, gonotoxine and not being able to escape into either the uterine or abdominal cavity, increases and continues to do so after the death of the gonococci. Martin has already shown that, of all the pyogenic organisms in tubal suppuration, the gonococcus is the first to disappear. If these observations be correct, the accumulations of pus in the closed cavities of the tubes can be explained without invoking the aid of living gonococci. It is the same action of gonotoxine which explains the complications of gonorrhœal infection of the tubes, such as localised peritonitis. The peritoneum reacts to gonotoxine, not only when the latter is employed in considerable doses, but even in conditions in which it is found in the distended tube.

Turn we now to the clinical aspects of gonorrhœa in women. The gonorrhœal affections of the vulva and its glands, the vagina, the rectum, and the genito-urinary system will be described by other speakers. The purpose of this paper is to deal briefly with the effects of gonorrhœa upon pregnancy. It is important to recognize the truth of the following statement:—

So long as the gonococcus does not gain entrance into the uterine cavity and attack the endometrium, a cure may be affected without seriously disturbing the sexual life. Gonococci may get into the cervical canal without going further, although it is highly probable that uterine infection will take place if once they become lodged in the cervix.

Menstrual Disturbance. The first and most important symptom of gonorrhœal infection of the uterus, adnexa, or peritoneum, is a suddenly-occurring disturbance of menstruation. The study of these menstrual disturbances as a means of diagnosing gonorrhœal infection is too much neglected. In a previously healthy woman, menstruating regularly and painlessly, the type of menstruation changes suddenly when the endometrium becomes involved in the gonorrhœal process. The flow becomes *profuse* and *irregular*, coming on too early or too late, recurring suddenly without obvious cause. Then there is pain mostly at first in the pelvis or loins sometimes preceded by, or accompanied with, pain in the external genitals. Colicky pains are especially significant, showing that the adnexa and the peritoneum have been invaded. There may be fever and rise of pulse, but in a couple of days these constitutional symptoms subside and the pains disappear or become bearable. These symptoms of menstrual disturbance are of great value in the matter of diagnosis and treatment, the chief point being the sudden change of type without other assignable cause.

Gonorrhœa in Pregnancy and the Puerperium. The signs of gonorrhœa in pregnancy are so few and the bladder troubles and vaginal discharges differ so little from the similar conditions common in pregnancy, that the ordinary primipara, young and inexperienced, is apt to overlook them altogether or regard them as troubles resulting from the pregnant state. Even should she consult her physician, he will probably regard her symptoms in the same light. Nevertheless, the condition is far too serious to be passed over lightly; it may result in wrecking the sexual life, with subsequent sterility and chronic invalidism. As physicians, we should take this matter to heart; we may be sure that we will not find gonorrhœa until we begin to look for it; we should suspect it, be on the watch for it in all primparæ, and not rest satisfied until we can conscientiously exclude it. Just as careful physicians and surgeons are on the watch for syphilis everywhere without respect of persons, so should careful obstetricians be on the watch for gonorrhœa.

A satisfactory diagnosis cannot be made in pregnancy from the clinical symptoms alone; where there is the slightest suspicion, the husband should be questioned as to the existence of a previous gonorrhœa, and then a careful search should be made for gonococci, not only in the vaginal discharges but also in the cervical mucus. With proper care no harm should follow the removal of the cervical mucus for examination. But while the microscope helps us to make a diagnosis of the presence of gonococci, it does not inform us respecting the virulence of the infection or the danger of the process; the course of the puerperium, alone, can determine these points. Very many pregnant women

infected with gonorrhœa, go through a favourable, uneventful, puerperium, while others have the pains and anxieties of a severe fever with numerous subsequent ill effects. An ascending gonorrhœa during the puerperium is a complication which is underestimated both as to its frequency and its significance.

It should be remembered that, in general, gonorrhœal invasion is a disease of the mucous membrane; other tissues are seldom attacked. In pregnant women the upward march of the gonococci is usually stopped at the *os internum*, above which point the uterine mucosa has been changed into decidua. Gonococci do not seem to penetrate into or spread along the decidua. The gonorrhœal process may seem to lie dormant until after the shedding of the decidua in labour, then the newly forming mucosa offers a new culture medium, and the infective process is awakened into renewed and increased activity. This is the explanation of the fact that an infective process, which has been inactive for weeks or months during pregnancy, may break out into an acute stage of marked intensity and extent during the first few days of the puerperium. The openness of the Fallopian tubes allows the easy passage of the cocci into them.

The first sign of beginning gonorrhœa in the puerperium appears generally on the third day, with a moderate rise of temperature and pulse. The patient feels pretty well, complaining only of pain on one side; there is usually tenderness on pressure over the adnexa or over the junction of the tube and the uterus on that side. These local conditions may continue practically unchanged for several days. The lochia become more offensive than usual, though no actual fœtor may exist; the quantity is increased without a preponderance of either bloody or purulent constituents. Specially noticeable, is the irritating acid reaction of the lochia causing pain and smarting in vaginal or perineal wounds and even intertrigo. Eczema of the external genitals should cause one to search for gonococci in the cervix. Bladder disturbances should lead one to examine the urethra. In the further course of the puerperium, repeated obstinate hæmorrhages may occur, even though placenta and membranes came away entire. The changes in the lochia and moderate fever (101.5° F.) may last for eight to fourteen days or even less, and may then disappear without the occurrence of subsequent trouble. In other cases in about eight to ten days, there is a chill followed by a sudden rise of temperature (104° F.) and pulse, and the signs of severe puerperal infection (sharp abdominal pains, distention of the abdomen, sensitiveness of the uterus and adnexa to pressure, profuseness and acidity of the lochia). The diagnosis from acute septic infection is difficult at first; but in gonorrhœal infection the temperature falls to 100° or 101° in a day or two, and fluctuates only one or two degrees during the twenty-four hours; the great rises and falls of tem-

perature so common in septicæmia are not observed in gonorrhœal infection. The pulse rate diminishes even more rapidly and remains usually with a maximum of 100. The lochia are never as fœtid as in septic cases. The tongue is moist and not coated; the patient soon regains her appetite; the abdomen becomes softer and bears pressure. The pains limit themselves to the uterus and adnexa; and by external examination, a distinct swelling, generally bilateral, can be made out. These tumours are so large, and they go on so often to pus formation that they can be differentiated usually from true parametritic exudation. It must be remembered, however, that puerperal pyosalpinx sacs develop easily in the loosened connective tissue of the broad ligament, thus giving rise to a false diagnosis of parametritis. There is often a mixed infection; some observers note that gonococci attacking the endometrium seem to prepare the way for streptococci, which in turn destroy the gonococci.

Gonorrhœa plays an important part in the production of puerperal infection, either alone or in connection with other microbes. Krönig was able to cultivate gonococci in 50 out of 170 cases in which the puerperium was febrile.

As the result of gonorrhœal infection some women become absolutely sterile and never bear a child; others bear one child and thenceforth are sterile. This latter condition is called *one-child-sterility* by some observers, and is held to be highly significant of gonorrhœal infection. The explanation of absolute sterility and one-child-sterility is interesting. If the woman becomes pregnant shortly after marriage the ovum enters the uterus, a decidua is formed and a barrier set up which prevents the extention of a gonorrhœal process that has been slowly advancing up the vagina. After the birth of the child, the gonorrhœal process, which has remained latent, invades the uterine cavity, involves the endometrium and causes sterility. If, however, the woman does not become pregnant before the gonococci invade the uterus, she may become absolutely sterile. There is, in a certain sense, a race between the fertilized ovum and the gonococci for the occupation of the uterine cavity, and the question of absolute or one-child-sterility depends largely upon which reaches the endometrium first. The severity and obstinacy of the disease in the chronic stage, long after the puerperium is over, give a grave significance to gonorrhœa in the puerperium.

Prophylaxis and Treatment. Particular attention is directed to the fact that gonorrhœal affections of the uterus, adnexa, and peritoneum, occurring after labour and particularly after abortion, in cases where operative interference has been employed, give the worst prognosis and furnish the largest number of cases which go on to operation. The scope and value of prophylaxis can be estimated only when we accustom

ourselves to think of the possibility of gonorrhœa in any pregnant woman. Abortion should be prevented, if possible, and operative measures avoided. During pregnancy, a supervision of the habits and method of living, as well as judicious local treatment, will diminish the chances of abortion and perhaps modify the intensity of the local disease. During abortion or labour, an expectant attitude is best, until it becomes evident what the course of the disease is likely to be. Internal examinations should be avoided as much as possible; Crédé's method of expelling the placenta and other violent manipulations of the uterus are apt to be harmful.

In the puerperal period the first essential is *perfect rest*, and the patient should be kept in bed as long as possible. During pregnancy, if the vagina, urethra, or rectum only is attacked, the cervix being as yet unaffected, energetic treatment of these organs should be instituted and sexual intercourse forbidden. Treatment of the cervix itself is somewhat risky and should only be done by means of ointments of ichthyol, protargol, or silver nitrate carried or injected gently into the cervical canal. It would be helpful to know in any given case whether the cervix alone is infected, or whether the uterus also has become involved. In the present state of our knowledge it is generally impossible to decide.

In the puerperium, if there be signs of advancing infection, absolute rest is the best treatment. Ice bags and opium will relieve pain and the symptoms of peritoneal irritation. Warm applications and dieting will help bladder troubles. All other methods of local treatment will do more harm than good. Vaginal irrigations are especially to be avoided, as they are so apt to bring on colic and contractions. The patient should be kept in bed for a long time and permitted to get up only when fever has gone and pain is felt only upon deep pressure over the organs, —rarely before the fourth week, better usually in the seventh week. Then we can begin treatment looking towards absorption. Then will be the proper time, too, for large hot douches, for ichthyol and glycerine tampons. In no case should intra-uterine treatment be undertaken before the end of the puerperium.

Time permitting, it would be interesting to show the danger of sudden, acute infection during the puerperal period by rupture of old gonorrhœal pus pockets. Death has occurred from rupture of a small gonorrhœal abscess two weeks after delivery, the puerperium up to that time having been normal. Death has occurred from nephritis during the puerperium, the tubes and ovaries having escaped infection, but the kidneys having been involved. An interesting point for discussion here would be the usefulness or advisability of abdominal section in these sudden, infective cases late in the puerperium.

In conclusion, let me again urge the importance of early diagnosis and energetic treatment in the gonorrhœa of pregnant women. The cocci may lurk in so many pockets and corners of the genito-urinary tract, the rectum, and the parturient canal, that great care must be taken to turn them out from all their hiding places. Treatment which does not succeed in doing this will probably fail, because of the lasting properties of the gonotoxine. In the light of recent investigations, the expectant attitude, in the matter of treatment, cannot be defended. Careful diagnosis, a thorough local examination, persistent treatment, the results being checked from time to time by bacteriological examination, seems to be the line now indicated. Finally, we should remember, in treating such cases, that the infection has come from some latent gonorrhœal process in the husband. It will, therfore, be of little use to cure the wife unless at the same time we take care that she be not re-infected by the husband. Both should be under treatment, and a return to ordinary marital relations is not safe until both are free from all possible foci of infection. Simultaneous treatment of both will give the best results.[1]

* The whole question of diagnosis and treatment of gonorrhœa in the female is thoroughly treated by Dr. Adolf Calmann, of Hamburg, in a paper which appears in the *Dermatologische Zeitschrift*, Bd. VI. I am indebted to this article for many valuable points in the preparation of this paper.

GONORRHŒA IN ITS RELATION TO DISEASES OF THE EYE.*

BY

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There are undoubtedly two forms of inflammation of the eye caused by gonorrhœa. The first, most frequent, and by far the most important of these is the well known purulent conjunctivitis which can nearly always be traced to direct inoculation or infection of the conjunctiva with urethral virus. In most of these there is auto-inoculation by means of the fingers carrying the secretion from the urethra to the eyes. This accounts to some extent for the greater frequency of the disease among males, whose fingers are, for obvious reasons, more liable to become contaminated; there are moreover, no doubt, a greater number of males affected with all forms of venereal disease owing to the different social habits of the two sexes.

I need not dwell upon the characteristic symptoms of gonorrhœal conjunctivitis, save that the specific micro-organism of gonorrhœa is always to be found in every genuine case. This makes a positive diagnosis always possible, but the presence of an acute purulent ophthalmia even in its early stages in a person obviously affected with gonorrhœa is sufficiently conclusive evidence as to the nature of the disease for all practical purposes, and an early diagnosis may be of vital importance for reasons I shall presently mention. In the absence of any source of auto-infection, or of positive facts as to the time and manner of infection, a bacteriological examination may be the only means of establishing the diagnosis, as there are undoubtedly purulent ophthalmias of a severe type induced by other infective material.

I do not find any modern writer describing the supposed metastatic gonorrhœal ophthalmia of earlier authors, and I think we may fairly assume that bacteriology has thrown this hypothetical disease out of court. On the other hand it has been shown that so long as a person has a discharge from the urethra containing gonococci at all, such a person is not free from danger of contracting gonorrhœal ophthalmia.

There are undoubtedly some cases of this disease much more virulent than others. The explanation of this clinical fact is largely theoretical, and although a mild type of the disease does occasionally present itself, the rule is that a large percentage of eyes attacked by gonorrhœal ophthalmia will perish, or only recover in a damaged condition, despite the best treatment we know of even at the present time.

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* Being part of a Discussion on Gonorrhœa at the Montreal Medico-Chirurgical Society, January 12, 1900.

The purulent ophthalmia of early infancy is nearly always due to the same kind of infection and still, unfortunately, contributes a large proportion of inmates to the blind asylums. This is a deplorable fact when we consider that this disease when properly treated from the outset rarely causes loss of vision and it does seem to me that legislation might well be invoked to protect young infants more efficiently against the ignorance and neglect which year by year renders so many human beings helpless for life at the very outset of their existence. According to Fuchs there are in Europe alone more than thirty thousand persons in the asylums for the blind from this cause alone.

The other form of inflammation of the eyes caused by gonorrhœa occurs as an iritis, and, so far as I have seen, always in the later stages of gonorrhœa, and in connection with other manifestations of gonorrhœal rheumatism; exceptionally, we must be prepared to meet with this complication as the only evidence of the arthritic tendency, and there are cases on record in which an iritis or an arthritis occurred indifferently with every attack of urethritis the individual contracted.

It is generally conceded that in gonorrhœal iritis there is no invasion of the intra-ocular tissues by the micro-organisms of gonorrhœa, but that the eye is merely irritated by the systemic toxines after systemic infection; the characters of the iritis are in favour of this view, being usually of the so-called serous variety, with little tendency to the exudation of plastic lymph, whilst, as pointed out by several of those who have taken part in this discussion, in gonorrhœal urethritis, there is a singular tendency to the exudation of a highly plastic material, and with this the micro-organisms are found in the tissues of the joints affected.

The treatment of gonorrhœal iritis does not differ materially from that of iritis of rheumatic origin. It would, however, seem a rational procedure to rid the patient as soon as may be, of the urethral disease and so free him from the continued source of infection. I am not sure that modern ophthalmology has made any great advances in the way of successfully treating the virulent forms of gonorrhœal ophthalmia; indeed, we still rely on the use of remedies that were commonly employed fifty or sixty years ago, viz: nitrate of silver and solution of perchloride of mercury; the former as an application to the averted lids once or twice daily in 1 or 2 per cent. solution, the latter as a cleansing wash, 1-5000. Frequent and thorough cleansing with some mild antiseptic is essential. Boracic acid 3 per cent., permanganate of potash, 1-10 of 1 per cent., or dilute peroxide of hydrogen and other antiseptic solutions are no doubt quite as useful as the perchloride, only the cleansing must be thorough and it is a good plan to keep the conjunctival sac filled with molten vaseline after each cleansing. Protargol and solution of argonin have recently been much vaunted,

but in so serious a disease it is something of a risk to use remedies that have not an established place in therapeutics.

Bacteriological investigations have demonstrated that in the early stages of gonorrhœal ophthalmia the gonococci are present only in the conjunctival epithelium, but that later on they penetrate deeply in the subconjunctival tissues. If, therefore, an early diagnosis can be made the logical inference is that an antiseptic powerful enough to render aseptic the entire epithelial structure should be capable of arresting the disease. Acting on this assumption, in the two last cases I have seen where an early diagnosis could be made (within thirty-six hours of the onset of the disease), I have been fortunate enough to so modify its course that recovery with good vision has occurred. In both, the onset gave all the signs of a most virulent form of gonorrhœal ophthalmia which would I believe have ended in the destructive ulceration of the cornea under ordinary circumstances. The patients, one a male the other a female, had gonorrhœa of not more than two weeks duration and came under my notice the day after the eye symptoms appeared. I explained the gravity of the disease and obtained consent to an abortive plan of treatment which I carried out in the following manner :—

The conjunctiva was thoroughly washed with perchloride of mercury solution, 1 in 3000, the patient etherized ; the outer canthus freely divided, the lids thoroughly everted so that every part of the conjunctival sac was exposed, irrigated with warm water and, after protecting the cornea with vaseline, the entire conjunctiva was freely swabbed with an 8 per cent. solution of nitrate of silver, and after a few minutes with perchloride, 1 in 2000, and lastly, smeared abundantly with vaseline, and cold borated compresses applied, these being renewed frequently and vaseline used freely. After twenty-four hours there was nothing but a severe muco-purulent ophthalmia, the secretion being distinctly more mucoid than purulent. In both, the disease ran a fairly mild course, and terminated in recovery with but little impairment of vision. The cornea did not escape some ulceration, but by no means destructive ; even this I think would not have occurred had it been possible to protect the cornea completely from the action of the silver nitrate. These results are so encouraging that I feel sure the method is worthy of a further trial under similar conditions.

ON A CASE OF HAMMER-TOE AFFECTING THE FOUR OUTER DIGITS OF EITHER FOOT.

BY

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While hammer-toe can scarcely be described as uncommon, it is, I believe, rare to find the condition so extensive as in the case I am about to describe, and the literature bearing upon the condition being singularly scattered and slight, cases rarely coming to autopsy and permitting thus a full study of the relationship of the various parts involved in the production of the condition, a full description of so extensive a case as this is perhaps worthy of being placed on record.

The specimen here described was found in a female æt. 64 under Dr. Stewart at the Royal Victoria Hospital. She was admitted from the Ladies' Benevolent Society's Home in this city, but unfortunately no data could be obtained of her previous or again of her family history.

It is unnecessary here to dwell upon the various features of the post-mortem record beyond saying that the main lesion was a large tumour springing from the dura mater in the occipital region and causing great atrophy of the posterior portion of the right hemisphere.

The feet were found equal in size, fair, well proportioned, their skin smooth and soft and free from calluses, and there was no eversion or inversion, although the soles of the feet had the appearance of having borne the weight of the body somewhat more on the outer side of the arch of the instep than is normal. With this there was a definite tendency towards pes cavus in each. The muscles of the calves showed no abnormality.

Both great toes were well formed and in the normal position, but the four outer toes of each foot were in a position commonly designated by the term, "Hammer-Toe." Each toe showed marked hyperextension of the first phalanx, the second phalanx was flexed at a right angle to the first and held so firmly in this position as to give the impression of ankylosis of the joint. The distal phalanx occupied the normal position relative to the second. The extensor tendons stood out prominently in the angle formed between the metatarsal and the first phalanx of each toe; the flexor tendons were apparently in their normal position.

Upon dissection it was found that the joints were not ankylosed (as from their rigidity had at first been thought), the peri-articular tissues were found to be in a normal state and though the interphalangeal

joint could not be flexed into its proper position, yet there was no apparent affection of the joint itself. Upon division of the flexor tendon, however, the toe could at once be easily straightened though it was still held in a position of hyperextension relatively with the metatarsal.

Now upon division of the extensor tendon the toe was immediately straightened out into the natural position. Not only was there no ankylosis but also the lateral ligaments were found definitely not to be contracted, in opposition to what has been observed and described in certain other cases of hammer-toe.

The number of toes involved and this absence of contraction of the lateral ligaments are points in which the above case differs from most recorded in the literature to which I had access. Quite the most frequent condition would appear to be one affecting the second toe only, of one or both feet, while in all cases cited, the flexor and extensor tendons were found normal. A series of observers describe a more or less marked contraction of the lateral ligaments at the articulation of the first and second phalanx. I have met with records of three cases of Hallux Flexus, but have come across no case of the condition so extensive as that here described, although in saying this I am far from wishing to indicate that such do not exist. At most I would say that hunting through English and French literature I have not come across such.

Upon showing this specimen to Dr. Shepherd he pointed out to me that the shortening of the tendons and the slight though definite condition of pes cavus would indicate that here we clearly have an example of the primary stage in the development of club-foot, and that as clearly we are dealing with a congenital condition. I find on reviewing the literature that Dr. Wm. Anderson, in 1887, in a paper before the Pathological Society of London, was of the same opinion with reference to many cases of the condition. Nor, studying the specimen more fully, do I see how a more simple and satisfactory explanation can be adduced. Both conditions show an abnormal shortness of the muscles (with their tendons) which control the foot.

At the same time it must be noted that other views have been brought forward. Thus in 1885, in a monograph on the subject, Blum divided the cases into three classes, (*a*) Congenital, (*b*) Acquired, and (*c*) Simulated. He explained the congenital variety as due to thickening and contraction in utero of the fascia on the dorsal aspect of the articulations of the first and second phalanges; the acquired variety he held to be due to the wearing of ill-fitting or badly made shoes.

S. G. Shattock exhibited several specimens and read papers on this

subject before the Pathological Society of London in 1886 and 1888. He regarded the malposition as of neuro-muscular origin, dependent probably on some affection leading to loss of power in the interossei. Little was of the same opinion.

Anderson, in 1887, before the same society, advanced the theory of heredity as the essential predisposing cause; he regarded ill-fitting shoes as the probable exciting cause. His paper gives an analysis of 22 cases in all of which the condition occurred between infancy and early adult life. In one it was noticed shortly after birth; in three of his cases there was associated hallux valgus and in two an associated pes cavus.

In 1893, Warrington Howard brought the subject again before the Pathological Society. His paper is of especial interest as indicating the hereditary nature of the condition. Thus he gives a history of one patient, a boy of 15 years, whose right second toe was affected. This patient's paternal grandmother had the second toe of the right foot affected, her son (the lad's father) had the same deformity, and of this man's family of seven, (1) The eldest son had the second right toe affected; (2) the eldest daughter, the second toe of both feet; (3) second daughter, no deformity; (4) third daughter, no deformity; (5) second son, second toe of left foot affected; (6) fourth daughter, no deformity; (7) third son (the patient in question) second toe right foot.

I regret that the complete absence of notes bearing upon the history of the case here recorded makes it absolutely impossible to throw any light upon the question of heredity in this connection. I may, however, add that in conversation with Dr. Shepherd and one or two other Montreal physicians, I have heard of other cases in this immediate neighbourhood in which there is an undoubted hereditary history. I can only repeat that it is difficult to regard most cases as other than congenital, the absence of deformity in the phalangeal bones and joints (apart from the mal-position) and the shortening of the extensor as also of the flexor tendons and the tendency to pes cavus, all support this view.

Whether a case such as this in which so many toes are affected, is of the same origin as the more frequent cases where only the second toe is the seat of the change, must be left an open question. We may, however, I think, safely divide cases of hammer-toe into,

(*a*) *Congenital*, occurring in one or more toes, either unilateral or bilateral, and being a condition either distinct in itself or a primary stage in the development of club foot, showing further a marked tendency to be transmitted.

(*b*) *Acquired*, beginning as an inflammatory process lighted up by

traumatism, as in direct injury, or again excited by the slow and intermittent pressure of an ill-fitting shoe.

To complete and round off my remarks a brief note may be given with regard to the treatment of the condition. Operative measures are only demanded when the deformity is fixed to a greater or less extent. In the higher degree of fixation Anderson's operation of excising the head of the first phalanx through a lateral incision is recommended by many, though Peterson recommends division of all the structures on the flexor surface down to the bone, the wound then being allowed to fill with granulations after the toe has been fixed in an extended position. In the slighter degrees of fixation, according to Adams, a subcutaneous division of the contracted tissues is all that is necessary.

In conclusion I beg to express my thanks to Dr. Adami for the opportunity of studying this case and to Dr. Shepherd for advice so willingly given with regard to its essential nature.

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The following references to the subject I have not been able to come across :

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QUARTERLY REPORT OF THE EYE AND EAR CLINIC OF THE ROYAL VICTORIA HOSPITAL, MONTREAL.

BY

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AND

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A Case of Acquired, Double-sided Lenticonus Posterior.

Removal of the Lens of one Eye by McKeown's Method—Recovery of Normal Vision.

Lenticonus, the condition in which the curvature of the lens is abnormally increased, is one of the rarest affections in eye surgery. In a recent article Pergens[1] was only able to gather 15 cases from the literature to add to his own which occurred in a buphthalmic globe. The affection occurs as a congenital or acquired condition, and may affect one or both eyes. In nearly every instance the increased convexity was confined to the posterior surface of the lens, and in several cases was associated with posterior polar cataract. In four cases the presence of divergent strabismus denoted the exclusion of the affected eye from binocular vision.

The following case is especially interesting because of its being the first instance in which operative treatment was adopted for the cure of the condition. The ease with which the lens was removed by McKeown's procedure, and the brilliant result obtained from the operation more than justify the adoption of this method in the management of all similar cases. The case is as follows :—

Mrs. G., æt. 60, entered the Royal Victoria Hospital, Sept. 29th, 1899. She complained of gradual loss of vision during the past four or five years, previous to which time her sight had been excellent in every respect. Two years ago she consulted a local optician and procured a pair of glasses (strong minus lenses), which helped her a little for a short time. The patient could assign no cause for the loss of vision. A short time before the onset of the ocular condition she had had an attack of quinsy, but of late her general health had been good.

Patient was an elderly, well nourished woman. Examination of urine negative.

[1] Pergen's—"Buphthalmus with Lenticonus Posterior," Archives of Ophthalmology, Vol. XXVIII., p. 620.

FIGURE I.

FIGURE II.

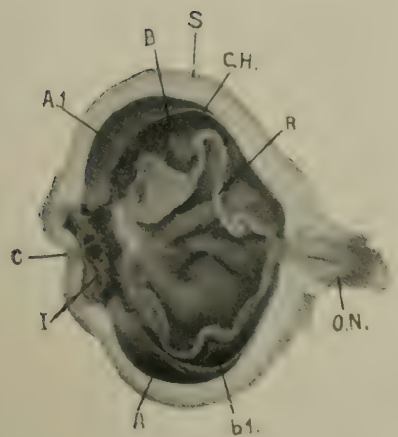

FIGURE III. S., sclerotic ; Ch., choroid ; R., retina ; A, A1., subchoroidal space ; B, B1., subretinalspace ; O. N., optic nerve. Iris (I.) attached to posterior surface of cornea at C.

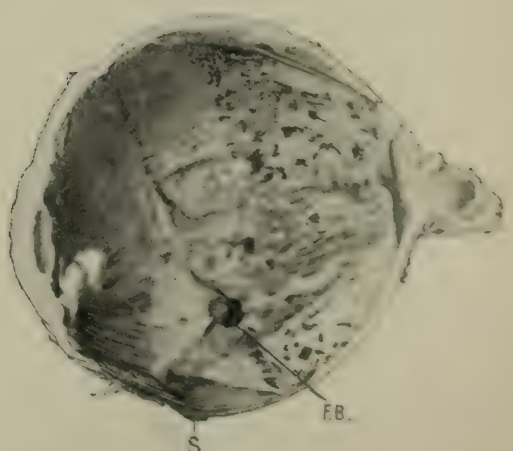

FIGURE IV. Foreign body (F.B.) held in position by bands of connective tissue ; S., margin of equatorial staphyloma.

Lids, conjunctiva, and lachrymal apparatus of both sides normal; the cornea were clear and bright and both showed a normal curvature with the ophthalmometer, *i.e.* $\frac{1}{2}^{\circ}$ of astigmatism, according to the rule.

On first throwing light into the eyes the impression was that one had to do with a case of conical cornea, but further examination with the ophthalmometer, a mirror for parallactic movement, and the direct method, showed that the case was one of double-sided lenticonus posterior. There appeared to be both by the direct and indirect methods a more or less rounded opacity near the posterior pole of each lens. In certain positions, however, one got practically clear but reduced images of the retinal vessels and fundi through the centres of the lenses showing that the opacity was due more to the irregular refraction of light than to definite changes in the lens substance itself.

At the same time with the direct method one could see there was slight but definite loss of transparency in the lens near its posterior capsule. The condition was more marked on the right than on the left side. At all times there were the optical phenomena of squirming and wriggling of the vessels.

The left fundus was absolutely normal. Along the inferior nasal branch of the right retinal artery and some millimeters from the optic disc was a large, irregular patch of golden-yellow colour the exact nature of which could not be made out. In one place a retinal vein was slightly hidden from view in its substance, but it was too dull and too far from the optic disc to be medullated nerve fibres; it was certainly not an atrophic condition, and apparently not an exudate.

There were a moderate number of opacities in each eye in the anterior part of the vitreous which moved rather quickly; Tn. in both.

Without mydriatic, R.V. $= \frac{6}{60}$, L. V., $\frac{1}{60}$, not improved.

With mydriatic, R.V. $= \frac{6}{60}$; $0^{\circ} - 0.5 - 0.5 = \frac{6}{24}$. L.V. $= \frac{6}{60} - 0.5 = \frac{6}{24}$.

Though the periphery of the lens was less myopic than the centre, the exact difference was not absolutely determined. The correction under mydriasis may be taken roughly as the measurement of the marginal error.

October 4th, 1899: Right preliminary iridectomy, cocain.

November 1st, 1899: Right extraction, cocain. Capsule was first freed from the lens by the injection underneath it of a physiological salt solution as recommended by McKeown of Belfast.[2] After the entrance of the saline solution there was no red reflex from the fundus, the lens having become totally opaque. A free incision having been made in the capsule the lens was now expressed with ease, the small

[2] McKeown—"A Treatise on Unripe Cataract." H. K. Lewis, London.

amount of lens substance remaining being afterwards washed out with the salt solution.

December 7th, 1899 : A thin capsule which had formed over the pupillary area was needled, and on January 11th, a day or so before the patient was discharged from the hospital, the following note was made of her condition :—

Right eye quiet ; angles of the coloboma in position ; thin capsule all over the pupillary area ; small but central aperture. A few opacities in the anterior part of the vitreous ; fundus as before ; Tn.

Right eye, 90° ± 0.0 ; 0° ± 1.5. R. V.=0/60 ; 0° + 1 + 10.0 = $\frac{6}{6}$; 0° + 1 + 14.0 Jæger 1.

Left eye as before.

A Case of Exophthalmos from Empyæma of the Frontal Sinus and Ethmoidal Cells—Operation—Recovery.

The frequency with which eye-surgeons are called upon to deal with disease of the frontal sinus and ethmoidal cells is explained by the close proximity of these structures to the orbit. Tumours generally originating within the accessory cavities of the nose find the way of least resistance towards the orbit, and the orbital structures themselves are of such a nature as to be readily affected by inflammation spreading from the neighbouring sinuses. The following report is in general typical of what occurs when secretion is pent up in the frontal sinus and ethmoidal cells. The sudden onset is to be explained both by a probable lack of careful observation on the part of the patient, and by the onset of an acute orbital cellulitis secondary to the chronic empyæmic condition. An interesting point is the failure of the transillumination to give accurate information. Although the left frontal sinus was filled with pus the light intensity was the same on both sides, while on the other hand the left antrum which was distinctly darker than the right was absolutely free from secretion.

The patient, a butcher, æt. 19, came to the out-patient department, December 19, 1899, with a history of painful bulging of the eye extending over 15 days. The protrusion was said to have come on suddenly (during the night) and the patient stated that the proptosis had not increased since the time of its first recognition. Weakness, loss of appetite and chilly sensations were the constitutional accompaniments of the local condition.

Present Condition : See photograph. Noticeable pallor and obvious weakness, general appearance that of a very sick man ; tongue furred, bowels confined ; temperature 102°.

Left eye exhibits an exophthalmos of 15 mm ; bulging forward and slightly upward ; the upper half of the cornea covered by the lid which

is reddened but not swollen. Slight degree of marginal blepharitis and moderate injection of the conjunctival vessels with watery discharge; slight tumefaction of the conjunctiva towards the inner angle; pupil the same size as the right, normal in all its reactions.

Fulness of the veins of the left side is the only ophthalmoscopic change present. Left vision equals $\frac{6}{6}$.

Some tenderness and indefinite fulness over the anterior part of the inner wall of the orbit. Tension of globe —1.

All movements of the left eye are very markedly impaired, though the excursion outwards is slightly better than in the other directions.

The right eye is normal in every respect, vision equals $\frac{6}{6}$.

Examination of the nose reveals a small amount of pus in the middle meatus, and on the posterior extremity of the middle turbinated of the affected side. Transillumination shows no difference in the transparency of the two frontal sinuses; the left antrum of Highmore is distinctly darker than that of the right side.

Operation, Dec. 14th, 1899: A transverse incision was made over the inner end of the left frontal sinus and the median extremity of this joined by another vertical cut at right angles. Skin and periosteum dissected back. The withdrawal of the trephine after its entrance into the frontal sinus was followed by the welling out of a considerable amount of muco-purulent matter. The anterior wall of the sinus was now laid freely open with bone forceps and the cavity carefully cleaned. The ethmoidal cells, transformed in great part into a soft pulpy material which oozed freely, were removed, as far as possible, by careful scraping. An opening into the nose was then made in the usual way and a drainage tube inserted.

Contrary to what was expected, the antrum of Highmore of the left side, though freely exposed, was found to be free from secretion. The difference noted in the illumination seemed to have been caused by an unusual thickness of the bony wall of this side.

The operation was followed by a gradual abatement of all symptoms. On the eighth day the temperature reached normal and remained so, the protosis slightly diminshed, and the movements of the eye became perfect in all directions. Drainage was maintained for some time to guard against the recurrence of the condition.

When last seen, March 4th, the exophthalmos present was barely perceptible. Vision was normal, and the movements of the globe perfect in all directions. The general condition of the patient was excellent.

A Peculiar Case of Injury to the External Auditory Canal.

P. S., a healthy looking boy from the country æt. 10, was sent to the Hospital Dec. 29th, 1899.

A month previous to admission he fell from a load of hay head first to the ground. Immediately after the accident he complained of pain in the left ear which continued with much suffering for about a week when the ear began to discharge a purulent fluid with some relief of the pain. The discharge has persisted ever since.

On admission the external meatus was found occluded by a fleshy mass resembling an ordinary soft polypus and was discharging freely a thin yellowish pus. There was in addition to this a little swelling of the tissues below the ear and considerable tenderness on pressure in the same locality. The house-surgeon was directed to snare off as much of the polypoid growth as he could reach and keep the ear thoroughly clear with boric acid syringing. This was done and the cleansing treatment continued until Jan. 7th, when an examination showed the condition to be about the same as when first admitted.

It was then decided to administer an anæsthetic and make a thorough exploration of the auditory canal. This at once revealed a firm substance occluding the canal. On grasping this mass with forceps some shreds of woody fibre were brought away and the mass, though distinctly movable, was firmly imbedded and evidently extended downwards into the swollen and tender region below the ear. With a little manipulation the mass was grasped by the forceps and drawn out. It proved to be the woody stem of some weed or shrub which had penetrated the outer end of the floor of the auditory canal from above downwards and lodged in the tissues of the neck below the ear.

After its removal the auditory canal and the track of the foreign body were thoroughly syringed with solution of hydrarg. perchlor, and lightly packed with iodoform gauze. This was removed after two or three days and the subsequent treatment consisted in keeping the ear clean. Ten days later the wound was entirely healed and the ear found in a normal condition; only a small reddened scar marked the point of entrance of the foreign body in the floor of the meatus.

The accompanying Figure (11.) shows the actual size and character of the foreign body, (4.6 mm. long by .5 mm. thick), the somewhat pointed extremity of which was smooth and clean whilst the part occluding the meatus was torn and ragged, having evidently been broken off from a longer stem in the fall. The consequences to the ear itself would have been much more serious had the missile penetrated the drum membrane as usually happens in injuries of this kind.

Systematic Examination of Excised Eyeballs.

(From the Pathological Laboratory of the Royal Victoria Hospital.)

Case I: Atrophia Bulbi, following Perforating Wound of the Cornea.

J. K., æt. 3, was brought to the hospital in Dec., '98; the child's right eye was visibly shrunken and though quiet when first seen, there

was marked filling of the pericorneal and conjunctival vessels after the usual slight examination. A large cicatrix, situated about the middle of the cornea, extended from the outer almost to the inner corneo-scleral margin. The central parts of the iris were drawn forward and firmly attached to the posterior surface of the corneal scar (anterior synechia). The anterior chamber was deeper on the temporal than on the nasal side; V. equals no p l; T.— 1.

The parents stated that the eye had been injured in the August previous, but that there had been practically no pain in the organ.

Examination: Measurements of the globe, 18 mm. antero-posteriorly, 22mm. transverse. Nothing of interest apart from what is noted above.

Section (Fig. III) in the vertical meridian after hardening in formalin, and freezing in the usual manner, shows a central corneal scar in transverse section, and the anterior surface of the cornea somewhat depressed at this point, giving the whole structure an epsilon-like appearance. The pupil seems to be entirely closed by a purse-like contraction, and the whole central area of the iris is drawn forwards and attached to the convexity on the posterior surface of the cornea. The anterior chamber is thus divided into two almost equal compartments. The lens is very much shrunken; a small portion remaining is in close contact with the posterior surface of the iris. On each side from the corneo-scleral margin to well beyond the equator of the globe, the ciliary body and choroid are extensively detached from the sclerotic. The space thus formed is filled by a clear firm exudate which is seen by the aid of the lens to be traversed by fine stretched fibrils of the lamina fusca and lamina suprachoroidea. To the inner side of the choroid the retina is extensively detached and thrown into numerous folds. The subretinal space is likewise filled with an exudate similar to that in the subchoroidal space.

The sclerotic coat gradually increases in thickness from about the orra serrata to the entrance of the optic nerve on each side of which it measures between 3 and 4 mm.

Microscopically, sections taken below the level of the corneal cicatrix make clear a few points in connection with the globe. The exudate between the sclerotic and choroid on the one hand and the choroid and retina on the other is entirely free from cellular elements. The choroidal vessels where this structure adheres to the sclerotic are moderately dilated but elsewhere, in the detached areas, the vessels are not to be seen.

The bundles of the sclerotic generally show a lack of compactness and towards the posterior pole, corresponding to the enlargement, observed macroscopically, this condition is especially noticeable.

Remarks : The condition of the globe described above is one which is seen with comparative frequency after penetrating wounds of the cornea. In the collection at the Royal Ophthalmic Hospital, London, there are numerous specimens showing similar changes. This form of atrophy, however, is not to be confused, though it frequently is, with the atrophia bulbi following upon a plastic iridocyclitis. Here the changes are more of a trophic or mechanical nature and the first link in the chain is in all probability the shrinking of the vitreous following upon an escape of its substance through a perforation or rupture of the hyaloid membrane. The absence of the normal support of the retina leads to detachment of that structure and the vacuum thus created brings about in turn a separation of the choroid. The order of detachment of tthe retina and choroid might, however, be reversed, and in this instance the anterior synechia may have also played a part.

Case II : Perforating Wound of Cornea—Traumatic Cataract—Uveo-Retinitis — Secondary Glaucoma — Ciliary and Posterior Staphyloma—Calcareous Degeneration of the Cornea.

About 30 years previously the patient, a male æt. 50, had accidentally run a needle into the right eye, which was painful and irritable for 10 or 12 weeks. The organ was perfectly quiet until three weeks before coming to the hospital when it became inflamed and painful for a second time. V. equals no P.l. ; Tn ; other conditions as below :—

Microscopical Examination : The eye measures 27 mm. in the antero-posterior by 25 mm. in the transverse meridian. The cornea is opaque and carries in its middle half a transverse calcareous band. At its upper and inner margin is situated a small, rounded, dark-colored bulging, measuring about 4 mm. in the transverse by 3 mm. in the antero-posterior direction, which bulges outwards 2 mm. beyond the normal curvature of the sclerotic.

Section : At ths upper surface of the globe the sclerotic is very much thinned and bulges outwards beyond the surface of the globe to the extent above mentioned. The point of greatest protuberance occurs just at the site of the ciliary body, which is greatly atrophied and stretched to form a thin, perforated, lining-membrane along the inner surface of the staphyloma. The iris is firmly adherent about its pupillary margin to the anterior surface of the lens, which is reduced to a thin atrophic disc, 0.5 to 1 mm. in thickness.

On either side of the central adhesion, the most typical condition of *iris bombé* is present, while both angles of the anterior chamber are completely blocked by the iris which is closely adherent to the posterior surface of the cornea for some distance inwards towards the centre.

A rounded ridge marks the line of separation between the staphyloma and the upper part of the posterior chamber.

The choriod and retina show evidence of long-standing inflammation leading to atrophy and pigmentary disturbances especially along the posterior margins of the ciliary processes. There is deep cupping of the optic disc.

Microscopical Examination : The calcareous degeneration noted macroscopically is seen as isolated, rounded bodies or aggregated masses of a yellowish color. These are situated for the most part in the anterior layers of the cornea, immediately beneath Bowman's membrane, but occasionally they break through this structure and are seen imbedded in the corneal epithelium.

Under the microscope the anterior boundary of the bulging corresponds, as nearly as possible, to the corneo-scleral junction. The wall of the staphyloma is composed of a few strands of greatly attenuated sclerotic mixed with pigment cells, which also form a more or less connected layer on its inner surface. The conjunctiva is continued backwards over the anterior three-fourths of the prominence and between the two structures is a rich plexus of dilated vessels.

The lens corresponds roughly to a dumb-bell in shape. At either end a clear band of lens-matter in the periphery surrounds a central area of amorphous debris, while the central part connecting these two portions is filled up by newly-formed, fibrous connective-tissue, presumably derived from the iris on account of the relatively large number of pigment cells imbedded in its substance. Further confirmation is also found in the fact that the capsule of the lens is everywhere intact except about the middle of its anterior surface.

The iris where applied to the posterior surface of the cornea is reduced to a thin layer of pigment and on the other hand Descemet's membrane is noticeably diminished in thickness where the cornea and iris are in contact with one another. At the point on either side where the iris leaves the cornea the posterior elastic lamina becomes increased in breadth and the endothelial cells can be followed both along its posterior surface and the front of the iris for some distance.

The choroid is reduced to a comparatively thin band of tissue, free, for the most part, from blood vessels. While the pigment proper of this coat has almost entirely disappeared ; the retinal pigment cells are seen in the usual situation. The thickness of this layer varies however ; in some places it is very much thinned or wanting, in others broader than the average.

The entire appearance of the retina is altered. This structure now consists of a meshwork of fibrillæ in which are imbedded rounded or

oval cells of moderate size and staining property, evidently the nuclei of the cells from which the processes originate.

Case III: Foreign Body in the Globe—Traumatic Cataract—Chronic Uveo-Retinitis—Secondary Glaucoma—Equatorial Staphyloma.

The patient, a blacksmith, æt. 77, had been struck in the eye with a piece of metal 25 years previously. He was operated upon shortly after the accident but never regained the sight of that side and the eye had been subject to severe attacks of pain from time to time.

Macroscopical: The eye measures 25 mm. antero-posteriorly, by 27 mm. transversely. The cornea is small and opaque, and the anterior chamber, which is shallow, contains a yellowish exudate in the periphery above and below. A slight bulging occurs in the equatorial region upwards (equatorial staphyloma). Tension x 2.

Section: (Fig. IV). The cornea appears to be or normal thickness but the anterior chamber is shallow and blocked at each angle by the periphery of the iris. Breaks in the continuity of the tissue of this structure occur here and there from atrophy, while along its posterior surface it adheres to the lens, which is greatly reduced in size, irregular and cataractous. The ciliary processes are greatly atrophied and flattened and the choriod and retina throughout their whole extent show extensive atrophic changes with numerous spots of accumulated pigment. There is no cupping of the optic disc. At the equator of the globe above there is marked thinning of the sclerotic, which bulges slightly at this point. Close to the margin of the staphyloma on the inner surface of the globe lies a small dark foreign body of steel or iron firmly retained in position by strong bands of white organized tissue, which extend outwards from the sides of the choroid along the posterior extremities of the cillary process.

Microscopical: The epithelial layer is present only as an irregular fringe, in many places the cells being entirely absent. A comparatively large number of clear spaces occur between the bundles of the *substantia propria* of the cornea, and attached to the sides of these are seen, not infrequently, one or more fixed corneal cells. Now and again a wandering leucocyte is found lying free in the spaces.

The ciliary processes and ciliary bodies are greatly flattened and atrophied, and the angle of the anterior chamber of both sides is blocked for a considerable distance by the periphery of the iris, which is firmly adherent to the posterior surface of the cornea. The anterior chamber is much diminished in size. The shape of the iris is such that it forms a roughly-triangular structure, one side of which is applied to Descemet's membrane, another forms the rounded posterior boundary

of the anterior chamber, and a third and largest extends from the inner apex (where it meets the same structure of the opposite side through a thin bridge of iris-tissue) to the ciliary body. These areas show a most intense small-round-cell infiltration.

The shape of the lens is roughly the same as in Specimen II. On On either side is a rounded, cataractous mass the centre of which has undergone extensive calcareous degeneration. Between the two stretches an irregular band of newly-formed fibrous connective-tissue, which seems here, also, to have been derived from the iris on account of the presence of numerous pigment cells. The lens has been dislocated in the direction of the staphyloma, described below, and on this side, somewhat internally to the ciliary body, its capsule is in immediate contact with Descemet's membrane, the iris having, at this point, undergone complete atrophy from pressure.

The staphyloma consists of thinned and stretched sclerotic, in the outer layers of which pigment cells are also found; its inner surface is lined towards the periphery by the atrophied choriod, and more towards the centre by a single layer of flattened cells, though in the very middle of the concavity all these structures are wanting. The retina bridges over the base of the staphyloma, and the angles of the subretinal space, thus formed, are occupied by a reticulated tissue-mass in which are imbedded numerous pigment granules and round mononuclear cells.

The choriod and retina elsewhere present the characteristics of an atrophic, plastic choroido-retinitis. The latter structure generally is converted into a mesh-work of fine fibrillar cells with rounded or oval nuclei; only in the vicinity of the optic disc of each side can traces of the nuclear layers still be made out. The vessels show very typically the usual thickening of the walls, and concomitant narrowing or obliteration of their lumina. Where the retina crosses the base of the staphyloma and also in front of the optic disc is seen in its substance a considerable number of large clear cavities of more or less rounded shape, but entirely free from exudate of any kind. The choriod is reduced to a thin atrophic seam and its pigment generally is mostly seen along its anterior margin, now and again shoving into the retina as isolated irregular clumps. As a whole the thickness of the pigment layer between the choriod and retina tends to vary greatly in some places being much more developed than in others. To the inner side of the anterior end of the staphyloma, and in front of the retina at the optic disc, is seen an irregular, wavy, nucleated mass of newly formed fibrous tissue. In the former situation it represents part of the bands which held the foreign body in position.

NOTE UPON THE CARBOLIC METHOD FOR THE DETECTION OF TUBERCLE BACILLI IN SPUTUM.

BY

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Agricultural College, Guelph, Ontario.

The following method, while in principle by no means new, has in my hands proved by far the simplest and most certain method of detecting tubercle bacilli in sputum, and I am led to draw attention to its value because I find the older and more cumbrous method of dissolving out the mucin of the sputum by means of caustic potash, is still very prevalent—a method which is slower, dirtier, and so far as my experience goes, by no means so certain to afford the tubercle bacilli when but few are present.

I have been unable to put my hands upon the article in which this method was first published, but if I remember aright it originated in Germany or Austria about the year 1893 or 1894. Kanthack and Drysdale in their "Course of Elementary Practical Bacteriology," (1895), refer to it and acknowledge that it is by far the best method for detecting tubercle bacilli. They recommend that 10 to 20 cc. of the sputum be added to 100 cc. of a 5 per cent. solution of carbolic acid in a small flask and the mixture be shaken vigorously for five minutes until the sputum is thoroughly disintegrated ; that then the contents of the flask be poured into a urine glass and allowed to stand for twelve to twenty-four hours. After decantation a little of this sediment is to be removed from the extreme depth of the glass and rubbed between two cover glasses. The films so made are to be dried in the usual manner, then washed in a mixture of alcohol and ether for one to three minutes and after having been dried between filter paper and passed again through the flame, they are to be stained with carbol fuchsin according to the ordinary method. Where the sputum is watery they recommend that to 100 cc. of it 5 cc. of glacial carbolic acid be added and the mixture shaken and treated in the above manner.

The modification of this method employed by me is more rapid than the above. So soon as the sputum arrives at the laboratory there is added to it an equal volume of 5 per cent. carbolic acid, the mixture is then briskly shaken up for a few minutes;—by this means the mucus is broken up and disintegrated. It is then allowed to settle. Sedimentation takes place very rapidly and it is not necessary to wait for twelve to twenty-four hours as recommended by Kanthack and Drys-

dale; indeed, within an hour all the bacilli which are present would seem to be deposited. And now using a pipette of small calibre the deepest portion of the sediment is drawn up, a small drop is placed on each of two perfectly clean coverslips, made into a film, dried in the air and then passed three times through the flame of a Bunsen burner.

It is not essential to treat with the mixture of alcohol and ether, but forthwith a drop or two of carbol-fuchsin can be placed on the coverslips and the film be stained by the ordinary method and counter-stained by means of Gabbitt's blue.

Besides the disinfection of the sputum which is insured by this means —in itself an advantage—the method is both simpler and much pleasanter to work with than is the use of caustic potash with or without boiling, while it would seem that the preliminary employment of the carbolic acid is a definite aid to the subsequent staining by means of the carbol-fuchsin.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Latent Fever in Chronic Pulmonary Tuberculosis.

MIRCOLI. "Latent Fever in Chronic Pulmonary Tuberculosis." *Deut. Arch. Klin. Med., 63, 162.*

Mircoli contributes an interesting article on the temperature in chronic tuberculosis. The work is both experimental and clinical, and shows that elevation of temperature is by no means a necessary feature of tuberculosis.

Elevations of temperature in tuberculosis are due to various causes. Proteins resulting from the destruction of bacilli play probably only a slight rôle in inducing fever, owing to the long life and slow destruction of the tubercle bacilli, which in these particulars contrasts strongly with the bacteria of pneumonia or influenza. Koch's R. tuberculin is a good example of the fever produced by proteins. Toxins form a second group of substances capable of inducing fever, and their strength and quantity may be regarded as the measure of vitality of the bacilli. Proteins are thus the products of dead, whilst toxins represent the activity of living bacilli. A third group of substances, the organic products of necrosing tissue resulting from bacteria, is also capable of raising the temperature.

On the other hand, certain toxins act as antipyretics and reduce temperature. In certain stages of other infections the action of these toxins is well seen, such as the afebrile stages of recurrent fever and of streptococcus or staphylococcus septicæmia.

In a large number of experiments on guinea pigs, Mircoli shows, that whilst the injection of large quantities of bacilli produce tuberculosis accompanied by fever, yet an afebrile tuberculosis results from a smaller inoculation. The latter cases run a prolonged course and the absence of fever is to be attributed to the power of the organism to accommodate itself to the toxins rather than to any differences in the anatomical conditions. In other words an equilibrium is established

in which the pyogenic toxins are neutralized by those having the opposite effect. The temperature of tuberculous guinea-pigs is, however, much more readily affected by heat or cold, by toxins as tuberculin, or by infections with other bacteria. Inoculated with typhoid bacilli, for instance, the resulting fever is much higher than in a healthy animal.

In a number of clinical observations of man, the writer states that fever in early cases of tuberculosis is an extremely unusual feature, even when well marked lesions are present in the lungs and bacilli are abundant in the sputum. [It is, however, not stated at what hour of the day the observations were made and as an ambulatory clinic was largely used, frequent daily observations can hardly have been carried out.] In cases with fever, puncture of the lung showed a mixed infection with pyogenic organisms.

In apyretic cases, the temperature is commonly below the normal, and inoculations of the serum of such patients to other non-febrile tuberculous individuals produced still further lowering of the temperature, indicating the presence of antipyretic toxins.

A comparison of rectal and axillary temperatures in afebrile tuberculous subjects, shows that the differences are often considerably greater than in health. According to Ewald, the rectal temperature is about ·5 C. (2° F.) higher than in the axilla, whereas in tuberculous subjects, Mircoli found the difference to vary from ·5 to 2° C., and averaged about 1° C. Such a feature may have some diagnostic value.

Muscular work has a marked influence in raising the temperature in tuberculous subjects, and this sensibility has also been suggested as a sign of some value in the diagnosis of tuberculosis.

An attack of influenza is often one of the most effectual methods of recognizing an apyretic tuberculosis. The temperature rises and remains persistently high. The writer regards this rise as due to the transformation of a latent fever to an active form, and states that the temperature is out of all proportion to the activity of local changes in the lungs.

At certain periods of the day, febrile symptoms, such as headache or muscular pains, have been observed in the absence of any elevation of temperature. The sweating of tuberculosis, often attributed to fever, has been shown by Maragliani to be due to a different cause, as he was able to produce it without fever by the use of ethereal extracts of tuberculous toxins. As a practical deduction, the writer believes that elevated temperatures have too commonly been regarded as an essential feature of early tuberculosis. Although not showing itself by elevation of temperature, yet the latent fever is indicated by unusual thermal differences between the rectal and axillary temperatures, by increased sensibility to thermogenic stimuli, such as muscular work; by infections

with other organisms, such as typhoid or influenza; or by exposure to external heat or cold. The so-called pre-tuberculous stage is probably to be regarded rather as representing the development of tubercle, whilst the condition we recognize as tuberculosis clinically is a later stage of the disease.

Notes of Twenty-two Cases of Juvenile General Paralysis, with Sixteen Post-Mortem Examinations.

F. W. Mott, M.D., R.R.S. "Notes of Twenty-two Cases of Juvenile General Paralysis with Sixteen Post-mortem Examinations." *Archives of Neurology.*

A case of general paralysis in a lad of 16 was published by Clouston in 1897, and there are now on record some 89 cases in early life. Mott's cases ranged, at the age of onset, from 8 to 23 years, and the sexes are about equally represented. They were all derived from the middle, or lower middle, classes.

Hereditary syphilis played a preponderating rôle in the etiology of these cases; in not a single instance could it be positively excluded; there was clear evidence of infection in 60 per cent. of cases, as shown by scars, teeth, etc.; and in 20 per cent. more, of a maternal history of this disease.

The duration of the disease was rather longer in the female, and longer in the cases which commenced early. In individuals attacked about the age of 20 or over, the disease ran an acute course. Progressive mental dementia was a constant feature, mania was present in three cases, whilst delusions of grandeur were much rarer than in adults.

Progressive paresis was present in every case, with one exception. Paresis and contracture of the legs occurred in quite half of the cases. Tremor of the face muscles, tremulous tongue and slurred speech, together with affection of the handwriting were present in all cases examined.

The pupils were irregular, or they reacted sluggishly or not at all to light.

In all the above symptoms it will be observed that the disease corresponds with the adult form, the most marked differences being the less severe character of convulsions when they occur, and in diminished frequency of delusions of grandeur.

Pathologically the changes found were similar to those in the adult. Atrophy of the brain, thickening of the pia-arachnoid membranes, and dilatation of the ventricles and granular ependyma were found in all cases examined.

Anomalous Eruptions in Typhoid Fever.

J. M. DaCosta. "Anomalous Eruptions in Typhoid Fever." *Trans. Assoc. Am. Phys., Vol. XIV.*

DaCosta calls attention to a diffused erythema simulating scarlatina and to an eruption resembling measles, in the course of typhoid fever.

Tho scarlatiniform rash is a uniform red eruption; it is seen all over the body, though not so in every instance. It is more distinct in some places than others and is easily influenced by pressure; it has periods of greater or less intensity, of partial disappearance, of vivid return; it lasts generally a week or somewhat longer. For the most part it is not associated with sore throat, although Jenner mentions a case where the occurrence of a sore throat and rash led to the erroneous diagnosis of scarlatina. Desquamation does not occur and there is seldom difficulty in determining the nature of the disease.

(These scarlatiniform rashes are known to occur in other infectious diseases, such as influenza. They occasionally follow the administration of drugs. I have recently seen a well marked instance forty-eight hours after the administration of quinine). A measly rash in typhoid is much rarer and may prove more puzzling.

One case is recorded in which the measly rash so closely resembled typhus, that it was deemed advisable to isolate the patient.

In two other cases an intercurrent attack of measles occurred during an attack of typhoid. In the latter cases a rise of temperature and catarrhal symptoms and in one a history of exposure to measles, enabled the diagnosis to be made.

The measly rash of typhoid has no influence on the temperature; it is less papular, finer, and has not the crescentic arrangement of measles, and there is no itching or desquamation. No influence on the course of the disease can be traced to these complicating eruptions and they are of interest only from the standpoint of diagnosis and pathology.

F. G. Finley.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Digestion after Resection of the Small Intestines.

PROFESSOR CARL SCHLATTER. "The Process of Digestion after Resection of About Six Feet of Small Intestine." *The Lancet, Jan. 27, 1900.*

Professor Schlatter reviews the cases reported by Dreesman at Düsseldorf, and advises uniformity in the method of measuring the resected bowel. He points out that a piece of necrosed intestine 20 inches long became 36 inches in length by simply filling it with water, not using any undue force.

Up to the present, six resections of more than two metres have been successfully performed, *viz* :—

215 c. m. (Köberle).
208 c. m. (Kocher).
215 c. m. (Dreesman).
234 c. m. (Shepherd).
310 c. m. (Fantino).
330 c. m. (Ruggi).

Subsequent disorders of the digestive tract followed in all but two of these.

Schlatter does not believe that the results obtained by experiments on animals can be applied to the human subject. Nevertheless, he would agree with Dreesman that :

(1) Resections, if less than two metres, do not provoke any disorders of the digestive tract except when complications are present.

(2) That resections of more than two metres may be performed without subsequent disorders of the digestive tract, provided the patients are young. The disorders referred to manifest themselves chiefly as diarrhœa.

In his own case, where 192 c.m. were removed, Dr. Peaut of Zürich, during the patient's convalescence, by scientific and approved methods, estimated the amount of the ingested albumin and fat which was assimilated by the patient during a period of nine days, and from the data thus obtained Professor Schlatter concludes his article by saying :— "That this case shows that, contrary to what has hitherto been the received opinion, the function of the digestive tract is seriously inter-

fered with, even in young persons, by the resection of more than two metres of the bowel, unless precautions are taken to secure the requisite sustenance."

Celluloid Yarn for Sutures and Ligatures.

SANITÄTSRATH J. PAGENSTECHER. "Celluloid Yarn—A New Material for Sutures and Ligatures." *Philadelphia Medical Journal, Feb. 10, 1900.*

Linen thread impregnated with a solution of celluloid, which can be sterilized by steam or in boiling water, according to the author, offers the following advantages :—

(1) It is cheap.

(2) It can be sterilized in steam without sticking together or getting entangled.

(3) It is smooth, non-absorbent, strong and non-irritating.

(4) It is stronger than silk ; knots do not readily slip, and needles are very easily threaded with it.

Pagenstecher has employed it exclusively for some years for all purposes, particularly in intestinal, bladder and joint sutures.

It would seem from the article that this new material, when used as buried sutures, does not give rise to secondary abscess such as not infrequently follows the use of chromicised cat-gut, silkworm-gut or silk. The material is made in five sizes by Lütgenau & Co., of Krefeld.

Primary Resection of Gangrenous Intestines.

ARTHUR E. BARKER. "On Primary Resection of Gangrenous Intestine." *British Medical Journal, December 23, 1899.*

Barker lays down three courses as being open to the surgeon :—

(1) Establishment of a permanent artificial anus.

(2) Establishment of a temporary artificial anus, followed later by resection of the gangrenous gut.

(3) Primary enterectomy.

He would advise the latter method in all cases where the patient is not too old or exhausted by vomiting and sepsis, and when the surroundings, after-care, and assistance, are such as to warrant the extra time necessary for its performance. Success depends upon :

(1) The preliminary and the after-treatment, as well as upon a carefully carried out operation.

(2) Lavage, when there has been stercoraceous vomiting.

(3) Means to maintain the body heat.

(4) The use of subcutaneous saline solution in feeble individuals, as well as hot brandy and water enemata.

(5) Local anæsthesia by means of eucain beta in all but the most excitable patients.

In the operation itself, while using Murphy's button, he prefers the use of the silk suture. Finally, he believes much benefit results from the subcutaneous use of saline solution, one pint at a time, twice daily for some days after the operation.

Injuries to the Neck of the Femur in Early Life.

Royal Whitman. "Further Observations on Depression of the Neck of the Femur in Early Life; Including Fracture of the Neck of the Femur, Separation of the Epiphysis, and Simple Coxa Vara." *Annals of Surgery, February, 1900.*

The author reports 48 cases of depression of the neck of the femur, of which 17 were simple fracture, one was separation of the epiphysis, thirty were examples of coxa vara, in four of which latter traumatism would seem to have been the exciting cause.

Whitman takes issue with Sprengel, who regards ten of the cases of fracture of the neck of the femur as reported by Whitman as examples of separation of the epiphysis, by saying :—"The anatomical evidence is now supplied and, finally, it may be stated that there is neither clinical nor experimental nor anatomical evidence to support the assertion that the epiphysial junction is a weak point in a healthy child, in the sense that separation at that point is more common than fracture. If this junction is ever a weak point in this sense, it is not in childhood, but rather in adolescence, when the external cartilage and resistant covering of periosteum have diminished to nearly the adult condition. It is at this age and in the class of cases that Sprengel has described, that epiphysial separation may be caused "by a slight degree of violence."

Fracture of the neck of the femur in childhood presents the following peculiarities :—

(1) It does not entail the immediate helplessness and persistent disability associated with injury.

(2) Patients may be able to walk in a few days after the injury.

(3) As a rule, perfect functional recovery takes place in the joint, but as the neck of the femur in its new position is subjected to a greater strain, a gradual exaggeration of the condition with its attendant symptoms of actual and apparent shortening, limp, and disability (a traumatic coxa vara), is extremely probable.

Of the 30 cases of coxa vara, 22 were in males, 8 in females; 25 were unilateral, 5 bilateral. In 27, the neck of the femur was displaced downwards and backwards, and in 3 downwards and forwards.

Rickets, traumatism, and a congenital narrowing of the angle, would seem to be the chief factors in producing the deformity.

Treatment. In the early stage, apparatus to remove the strain, combined with exercises, was effective in relieving the symptoms but did not prevent recurrence when discarded. A linear osteotomy below the trochanter, in advanced adolescent cases, enabled the operator to correct the adduction and outward rotation, but left the angle at the neck still narrowed. Lately, he has practised cuneiform osteotomy, preceded by vigorous manipulations, to overcome ligamentous or muscular obstruction to abduction, the chief limitation in movement. The wedge of bone is removed opposite the trochanter minor, the upper cut being at right angles, the lower oblique ; the distance between should be about three-quarters of an inch. The femur is abducted till the cut surfaces come in opposition and is maintained in that position by a spica of plaster-bandage, which should extend to the foot.

Excision of the hip is only performed in cases where separation of the epiphysis is followed by non-union.

The Röntgen pictures were employed in all cases to demonstrate the accuracy of diagnosis made from physical signs.

Renal Papillectomy.

E. Hurry Fenwick. "A Contribution to the Study of Painless Unilateral Renal Hæmaturia in the Young Adult." *British Medical Journal, February 3, 1900.*

Fenwick points out that, since the introduction of the electric cystoscope, the site of hæmorrhage in renal hæmaturia can readily be determined ; but he draws attention to the fact that persistent, painless, unilateral hæmaturia in the young adult, not due to stone, cancer, tubercle, or other "specific cause," and which up to the present have been described as cases of renal hæmophilia (Senator, Broca, Passet) ; as hæmorrhage of anatomically unchanged kidneys (Piqué and Reblaud, Groslik) ; as hæmaturia from a healthy kidney (Klemperer); and as being due to an angioneurosis; is due in some cases, at least, to the renal papillæ and the mucous membrane covering them.

He reports two cases, both women, on whom nephrotomy was performed for persistent hæmaturia; an examination of the pelvis, in each case, with a strong electric light, revealed a villous-like tumour of one papilla, all the others being normal. On examining this mass on removing it with a Volkman's spoon, the condition was found to be due to varicose vessels in the mucous membrane. Papillectomy in both cases was successful in stopping a hæmaturia which had not been relieved by long courses of medical treatment.

A. E. Garrow.

Gynaecology.

UNDER THE CHARGE OF WILLIAM GARDNER.

Strangulation of Intestines by Fallopian Tubes.

P. C. Fenwick, M.B., Lond., M.R.C.S., L.R.C.P. "Strangulation of Intestines by Fallopian Tubes." *British Medical Journal, Jan. 13, 1900.*

The above condition occurred in the following case. The patient, aged 52, was admitted to hospital exhibiting the usual signs and symptoms of intestinal obstruction. On opening the abdomen half an hour later, several feet of small intestine protruded through the opening and the bowel had to be evacuated through a linear incision before it could be returned or the hand passed into the abdomen. A band was found in the pelvis tightly grasping a mass of small intestine. The band was divided between two ligatures and the liberated bowel brought to the surface for inspection, but was found to be merely congested and so was replaced. The patient did well for the first ten days but then died quite suddenly. Post-mortem, the constricting band was found to consist of the left Fallopian tube and ovary, the end of the tube having become adherent to the side of the pelvis leaving a round opening through which several coils of intestine had passed and become strangulated.

Chronic Hypertrophy and Dilatation of the Bladder Simulating an Ovarian Cyst.

James Oliver. "Chronic Hypertrophy and Dilatation of the Bladder Simulating Ovarian Cyst with Death from Uræmia." *British Medical Journal, Nov. 4, 1899.*

The patient was a multiparous woman, aged 55 years, who had ceased to menstruate five years previously. Her abdomen had been enlarged for eight or nine months but the size had rapidly increased during the last four or five weeks, pain being absent. For three weeks she had been troubled with incontinence of urine, but until that time, micturition had been normal.

Examination showed the abdomen to be distended by a large swelling which extended from the pelvis up to the ensiform cartilage. Percussion revealed resonance in the flanks and dullness elsewhere. Fluctuation was not very distinct; there was slight œdema of both legs but

pulse and temperature were normal. Vaginally, the cervix was found to be very high in the pelvis and the internal vaginal wall was pushed down "by a firm roller-like swelling."

The patient was placed in the lithotomy position and a No. 4 catheter passed, through which five ounces of urine escaped. The bladder was then aspirated about midway between the pelvis and umbilicus, two pints of urine being drained off. A No. 8 catheter was now passed into the bladder per urethram and the bladder was thus emptied. Altogether about ten pints of urine were removed.

Six hours later the patient was seized with uræmic convulsions and died.

On post-mortem examination the bladder was found to be enlarged so as to reach above the umbilicus, and the reflexion of the peritoneum from the bladder to the anterior abdominal wall was situated over three inches above the pelvis, the space beneath this reflection being filled by rather thickened subperitoneal fat. The wall showed evidences of true hypertrophy and anteriorly there was a patch of ecchymosis, the viscus containing one and one-half pints of ammoniacal urine mixed with blood and mucus. Although there was no true sacculation between the muscular bundles, the trigone was enlarged and formed a pouch between its base and the urethra, the base forming a ridge which overlapped this sac. The external meatus lay high up behind the pubes and was surrounded by dense fibroid tissue. The ureters were dilated and there was double hydronephrosis.

Tubercle of the Uterus.

P. D. Turner, M.D. "Tubercle of the Uterus." *British Medical Journal, Nov. 11, 1899.*

Dr. Turner examined the genital organs in twenty-seven consecutive cases of tuberculosis in females in connection with the post-mortem department of the Brompton Hospital, the specimens being examined both by the microscope and the naked eye.

In five cases (18.5 per cent.) undoubtedly tuberculous lesions were found, tubercle bacilli being discovered. Among these the following parts were involved, viz., tubes alone, once; tubes, fundus, and cervix, once; and tubes, fundus and one ovary, once. All five cases showed traces of ulceration of the intestine.

In several additional cases, evidences of catarrhal or interstitial salpingitis were observed. Tuberculosis was suspected in these cases but the presence of the tubercle bacillus could not be proved.

The author inferred "that the usual form of tuberculous salpingitis appeared to be due to the entry of the bacilli into the open ends of the tubes from the endometrium; infection through the blood supply

probably also occurred, but much less frequently. The cervix was similarly affected. The ovary did not form the nidus and was comparatively rarely diseased in these cases." As far as the author knew the patients presented no symptoms of genital diseases.

Complicated Convalescence from Ovaritomy.

JOHN D. MALCOLM, F.R.C.S., Edin. "Complicated Convalescence from Ovariotomy." *British Medical Journal, Dec. 16, 1899.*

The patient, aged 64, suffered from a large ovarian tumour which was removed by Mr. Malcolm on January 15, 1899. On the evening of the day of the operation she became very collapsed after very violent purgation, which was probably due to delayed action of the purgatives which had been administered previous to the operation. This condition, however, was successfully overcome by the use of stimulants and everything went along nicely until the fifteenth day when she was permitted to turn upon her side. The next morning the left side of her neck was painful and swollen; two days later the pulse rate was 120 and temperature 103.2° F. Examination of the mouth revealed the fact that the opening of the left Stenson's duct lay in contact with a decayed tooth and was hot and dry. This inflammation was subdued by soothing treatment and in about thirty hours a discharge of a white and slightly irritating fluid took place and could be increased by pressure over the parotid. This discharge kept up for some days but soon became thin and watery. Four weeks after the operation, the œdema and tenderness over the angle of the jaw increased and the patient complained of sharp paroxysms of pain in this region. The next day the capsule of the gland was incised and about two drachms of pus escaped. A drainage tube was inserted and was not removed for some days, but it was not for nearly three months after the ovariotomy that the patient was able to go out.

This is the second case of parotitis due to a carious tooth that Mr. Malcolm has had under his care, but the first patient recovered without the formation of an abscess.

Vaginal Cœliotomy.

PROF. KYNOCH. "Vaginal Cœliotomy." *British Medical Journal, Jan. 6, 1900.*

In Prof. Kynoch's paper on this subject he stated that the three steps in this operation were: (1) Opening the abdomen; (2) removal or examination of the diseased organs, and (3) closure completely or partially of the vaginal wound. The vaginal opening may be either transverse or longitudinal, the latter being the one in which the ureters are least liable to become injured, and made either through the an-

terior or posterior fornix. The indications are: (1) Retroflexion of the uterus; (2) inversion of the uterus; (3) chronic ovaritis with adhesions, and (4) prolapse of the ovary.

In rupture of extra-uterine pregnancy with diffuse intraperitoneal hæmorrhage without the formation of an hæmatocele, the abdomen should be opened anteriorly, but where the condition is discovered up to the tenth week before rupture the sac may be advantageously removed per vaginam.

The best method of treating those cases first seen after the formation of an hæmatocele is still *sub judice*, but where the hæmatocele is in Douglas' pouch and is bulging down into the posterior fornix, vaginal cœliotomy gives excellent results.

The Capacity of the Female Bladder.

Hunner, Guy L., and Lyon, Irving P. "The Mensuration and Capacity of the Female Bladder." *Johns Hopkins Hospital Bulletin, Dec., 1899.*

These investigations have been carried out upon living women with practically normal bladders and with the women in the genu-pectoral position, the bladder, rectum and vagina being distended with air. Repeated examinations of the same bladder under similar conditions showed that the intra-abdominal pressure was nearly uniform. Distention of the bladder by air with the patient in the genu-pectoral position caused less discomfort than if fluid had been employed and the patient placed in the dorsal position and, therefore, the former method is less liable to error than the latter. "The chief points investigated were: (1) The average atmospheric distention capacity of the female bladder, and (2) its actual internal measurement from the internal urethral orifice to certain chosen points on its walls."

For the first purpose the woman is placed in the genu-pectoral position and the three pelvic cavities filled with air. From a catheter in the bladder the air is conducted, on its expression, into a long bell glass inverted over water. This bell glass is graduated and the amount of water displaced is read off. This method was practiced on 25 women and the average atmospheric capacity of their bladders was found to be 303 cc., the extremes being from 160 up to 545 cc. The fluid capacity was also measured upon 22 women and found to be 429.7 cc., thus being greater than where air alone was used. The capacity, both air and fluid, of the bladder was found to be greater in nullipara than in parous women, probably due to the greater elasticity in the vesical walls in the former than in the latter.

F. A. L. Lockhart.

Reviews and Notices of Books.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION, VOLUME XVII.—Edited by DE FOREST WILLIAMS, A.M., M.D., Ph.D., Recorder of the Association. William J. Doran, Philadelphia, 1899.

The transactions of the American Surgical Association, always of interest, contain this year an unusual number of most interesting and carefully prepared papers. The President, Prof. Keen, of Philadelphia, in his address, took up the subject of "The Technique of Total Laryngectomy." After showing the great improvement in results as a better technique had been evolved step by step, Prof. Keen reported a case recently operated upon by himself. The Trendelenburg position was strongly advocated for this and for operations on the lips, mouth, tongue and pharynx, as most effective in preventing the entrance of blood into the air passages. In the future, Prof. Keen hopes to do without any tracheal tube.

Prof. Senn contributes an article on "First-Aid Package in Military Surgery." The history and exceeding usefulness of the first-aid package in military surgery is clearly and forcibly stated. The first-aid package must meet the following requirements :—

(1) The material it contains for dressing the wound must not only be aseptic but antiseptic.

(2) The antiseptic must be non-volatile and resistant to chemical changes for a long time.

(3) It must contain a fixation material which will prevent displacement of the dressing after it has been applied.

(4) Its size must be such as not to inconvenience the soldier or to prove a source of objection to the military authorities.

(5) The dressing applied should not interfere with the free evaporation of the wound secretion.

This is followed by a paper by Fowler on "Observations upon the Organization and Equipment of Field Hospitals in the Volunteer Army." These two papers are of particular interest at the present time and are full of information.

One cannot mention all of the valuable papers contained in this volume, but the paper on "Appendicitis," by Richardson, is a most scholarly one, written by a man of large experience. This paper, and the discussion following, are worth the price of the volume. It is a paper that can be read with profit by the student, general practitioner and surgeon.

Prof. Kocher, of Berne, read a paper on the preparation of the surgeon's hands, the patient's skin, and the use of silk and cat-gut ligatures. Prof. Kocher claims that sterilization of the hands daily and oftener is impracticable, but that they may be so far disinfected that the clinical results will be satisfactory. He would do away with cat-

gut altogether, or only use it in septic tissue. His clinical results are so good that his methods can hardly be criticised.

G. E. A.

ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE.—By CHARLES DE M. SAJOUS, M.D., and One Hundred Associate Editors assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromolithographs, Engravings and Maps. Vol. IV. Philadelphia, New York and Chicago, The F. A. Davis Company, 1899.

The present seems quite up to the standard of excellence attained by the previous volumes. Sajous' Encyclopædia enables one to review recent literature with great rapidity and considerable satisfaction. References are given very fully and thus one is put in the way of reading the original article if one desires to do so. Of special interest are the articles on Insanity, taking up Iodicy, Imbecility, General Paralysis, Melancholia, etc., and the article on the Diarrhœas of Infancy by Prof. A. D. Blackader. This latter is full and comprehensive, while it is, at the same time, concise and clear. The subject is of very great interest to all general practitioners and dealt with in its pathology, symptomatology, prognosis and treatment, in that thorough manner which its importance demands.

Valuable articles on Malarial Fevers, by Wilson and Ashton, and Locomotor Ataxia, by Pritchard, deserve special mention. The article on Intubation, by Waxham, comes most opportunely. The relative merits of intubation and tracheotomy are carefully compared and the indications for each clearly stated.

McPhedran contributes a very full and complete article on the Diseases of the Liver. In this article is a most comprehensive digest of the latest views on many of the unsettled questions concerning the pathological conditions of this important viscus.

The editor apologizes for writing the article on Leprosy, himself. It seems that this labour was forced upon him at the last moment, but most readers will probably feel, after reading it, that it is another evidence, that if a thing is to be well done, it must be done by a busy man.

The binding and printing are quite equal to that of the preceding volumes.

G. E. A.

SURGERY: A Treatise for Students and Practitioners. By THOMAS PICKERING PICK, Consulting Surgeon to St. George's Hospital, Senior Surgeon to the Victoria Hospital for Children, H.M. Inspector of Anatomy in England and Wales. Longmans Green & Company, London, New York and Bombay, 1899. Royal 8vo, pp. 1176. Price 25s.

Books of this class are always in demand and the above is a good representative of its class. Students and general practitioners will find it good reading and up to date, written by a man of experience, who has opinions of his own and the ability to make them clear to his readers. On some subjects the author may have sacrificed fullness of detail to brevity, viewed from the vantage ground of the hospital sur-

geon, but, as stated on the title page, the book is intended for students and practitioners. The pathology is based on the latest researches, symptomatology and treatment are clearly defined, and the illustrations really serve their purpose.

Mr. Pick is not an enthusiastic advocate of the Murphy button, the great point in intestinal anastomosis in favour of it being the rapidity with which it can be used. He then says, "numerous unfortunate accidents have followed its use. Among them are a tendency to remain in the bowel sometimes without doing any harm, at others causing obstruction and perforation; in other cases there have been failures of union or sloughing at the line of junction and extravasation of fæces; again, a case has been recorded where the button, from its weight, caused kinking of the gut and strangulation, and in a patient under my own care the lumen of the tube became blocked by a piece of potato skin which the patient had swallowed. It would seem therefore, that it is better to join the two ends of the intestines by means of simple suturing without the use of any appliance and to reserve Murphy's button for those cases when the completion of the operation in the shortest possible time is a matter of urgent importance."

This view accords with that of Mr. J. Hutchison, Jr., who has found that in resection of the intestine for gangrenous hernia, when Murphy's button was used, there were seven per cent. of recoveries against forty per cent. after direct suture.

Mr. Pick is quite clear in his advocacy of the removal of neighbouring lymphatic glands in malignant disease but thinks that possibly in carcinoma of the breast the indication has been followed quite far enough.

In that important chapter on fractures one might wish for greater detail and fuller discussion of different methods. In fracture of the patella and of the olecranon Mr. Pick thinks that wiring of the fragments in many instances is the better plan, but should only be attempted by men operating daily and who have a perfect technique. He speaks favourably of massage in the treatment of fracture.

G. E. A.

On the Principles which Govern Treatment in Diseases and Disorders of the Heart.—The Lumleian Lectures delivered before the Royal College of Physicians, London, by Sir Douglas Powell, M.D., F.R.C.P.

As the title indicates, this little book deals chiefly with treatment but necessarily takes up a good many points in etiology and semiology.

The first lecture is devoted to the neuroses of the heart, including angina. The writer refers particularly to the large class of individuals known as neurotics, and among whom symptoms of functional cardiac diseases are so common. He dwells on the importance of excluding organic diseases as an important preliminary measure, to dispel needless fears on the part of the patient. After referring to the correction of the diet and habits of the afflicted individual, the other measures usually adopted are discussed. In the time allotted to a single lecture the treatment is necessarily rather sketchy, and we can only wish that the useful

hints thrown out could be amplified by fuller references to illustrative cases.

Cases of organic heart disease are considered in the second lecture; in the third and closing chapter the effects of exercise, the Schott treatment, and the use of antistreptoccus serum in ulcerative endocarditis, are among the subjects dealt with.

The lectures are obviously the outcome of wide experience and close observation, and the reader will find many useful hints in dealing with a class of cases which frequently come under observatioin.

F. G. F.

LECTURES UPON THE PRINCIPLES OF SURGERY DELIVERED AT THE UNIVERSITY OF MICHIGAN.—By CHAS. B. NANCREDE, A.M., M.D., LL.D., Emeritus Professor of General and Orthopedic Surgery, Philadelphia Polyclinic; Senior Vice-President of the American Surgical Association; Corresponding Member of the Royal Academy of Medicine of Rome; Member of the American Academy of Medicine; Late Major and Chief Surgeon, U.S.A., etc. With an appendix containing a Résumé of the Principle Views held concerning Inflammation. By WILLIAM A. SPITZLEY, A.B., M.D., Senior Assistant Surgeon, University of Michigan. Illustrated. Philadelphia, W. B. Saunders, 1899. Price, $2.50.

It is always refreshing in our times to read an author, who holds strong views and has the ability to put them clearly. Prof. Nancrede has something to say, and says it. He first takes up the group of tissue changes designated by the term inflammation, and combats the view that there is an "aseptic" and an "infective" inflammation. He contends that the only logical and scientific position to assume is that inflammation is never anything but an infective process, and that the so-called aseptic inflammation is only "repair." That while certain stages of repair present clinical and histological phenomena similar to those seen in inflammation, they are not identical processes, due to the same cause. The different phenomena of inflammation are clearly discussed.

Tho author then deals with changes in the blood, surgical fevers, pyæmia, suppuration, gangrene, tetanus, etc., etc. The letter press is clear, the style interesting, and the illustrations good. Books of this class should be more generally read and studied. A sound and thorough knowledge of the principles of surgery are the best foundation of surgical knowledge, and we can heartily commend Nancrede's work to all students, general practitioners and surgeons. It is definite, concise, and up to date.

G. E. A.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL SOCIETY.—Volume XV, 1899.

This volume contains a series of highly interesting papers on problems of which many come under the daily notice of the practising physician.

Dr. Gardiner, of Colorada Springs, emphasizes the importance of air

and sunlight in the treatment of tuberculosis. He urges the advantages of a properly constructed tent, and utters a warning note about a ranch life, owing to the rough character of the food. The X rays have been utilized by Williams in the early diagnosis of pulmonary tuberculosis, and in his hands have proved signally successful. He calls attention to the limited excursions of the diaphragm and to the shadow at the apex.

Babcock relates an interesting series of cases showing the effects of altitude on heart disease, and endeavours to show that all forms of heart disease do not contra-indicate sojourn in such localities. A study of effects of violent exercise on the heart by Williams and Arnold, is based on an interesting series of observations, and should be read by all interested in athletics.

Space forbids reference to other papers, many of which are valuable contributions by men of recognized eminence in the profession. A careful perusual of the transactions will repay the reader for the time devoted to them.

F. G. F.

Diseases of Women.—A Treatise on the Principles and Practice of Gynæcology. By E. P. Dudley, A.M., M.D. Second Edition, Revised and Enlarged, with 450 illustrations. Lea Brothers and Company, Philadelphia and New York, 1899.

This edition retains most of the subject matter of its precedessor, but there are a few changes, and it has been enlarged by the addition of 78 pages of reading matter and between 30 and 40 illustrations.

The symptomatic diseases, such as amenorrhœa, menorrhagia, dysmenorrhœa, etc., have been given a special part of the book, in chapters LI to LIV, which arrangement will be found to be very convenient. The illustrations are excellent, being clear, instructive and not too numerous. A chapter on "Pelvic Massage" will be found useful for those who care to try this form of treatment of pelvic disease.

F. A. L. L.

Dictionnaire des Termes de Medicine, Francais-Anglais. By H. de Meric, Member du College Royal des Chirurgiens d'Angleterre: Chirurgien de l'Hôpital Français à Londres; Membre de la Société d'Hygiène de Paris; etc., etc. London, Ballière, Tindall and Cox, 1899. Price, 4s.

This is a small octavo volume of 243 pages with double columns to the page, the French words being printed in black and the English in ordinary type. It constitutes the second part, the first volume containing the English-French. In looking through it one notices that the author in some instances has translated the French into correct but obsolete English terms, which are not found in any but the larger English lexicons, where the commonly used term would have answered equally well. For example, "apneuste" is translated "afflicted with apneustia." With this exception the book answers well the purpose for which it was designed and will be found useful to both French and English students and practitioners.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, October 23, 1899.

J. G. Adami, M.D., President, in the Chair.

Pathological Specimens.

Dr. A. G. Nicholls presented the heart and spleen from a case of Leukæmia and read the clinical notes of the case.

Monstrosity.

The President, in the absence of Dr. J. J. Ross, demonstrated a fœtal monstrosity, the causes for the production of which were discussed by Drs. Evans and A. D. Blackader, Dr. Adami replying.

Aneurysm of the Aorta.

Dr. W. F. Hamilton reported a case of Aneurysm of the Aorta, and Dr. Nicholls showed the specimens from the case.

Excision of Gastric Ulcer.

Dr. G. E. Armstrong reported this case. (See page 933 of the December, '99, Number.)

Dr. F. J. Shepherd had been present during part of the operation and was convinced when he saw the ulcer that the only thing to do was to excise it. He did not understand Dr. Armstrong's reason for doing the Heineke-Mikuliez operation in this case. He thought that surgery could do more than medicine for these cases.

Dr. Elder referred to the case he had reported before the society the previous session, the fatal termination of which had been due to exhaustion consequent upon the large hæmorrhages.

Dr. A. E. Garrow asked regarding the curettage and cauterization plan of treatment.

Dr. C. F. Martin thought it was possible that cases such as this had gone unrecognized for a long time and that they might not have come to operation if treated early.

Dr. Armstrong, in reply, stated that he had performed pyloroplasty here because it was found that cases did better after it. With regard to the use of the cautery, in his first case he had cauterized the ulcer and it did equally well. It depended upon the character of the ulcer; here, with an infiltrated base, excision was the only course.

Stated Meeting, November 3, 1899.

J. G. Adami, M.D., President, in the Chair.

Drs. Grace Ritchie England, H. J. Harrison and A. D. Irvine were elected ordinary members.

Uterine Myoma with Pyosalpinx.

Dr. William Gardner read the report of this case, and Dr. Maude Abbott demonstrated the pathological specimens. (See page 59 of the January Number.)

Dr. F. A. L. Lockhart considered the condition very rare indeed. He had never seen anything like it before, but he remembered one case in which there was a pus tube along with a myoma, but it differed in being densely adherent to the myoma. The point Dr. Abbott had brought out regarding the fimbriæ was an important one.

The President was much interested, also, in the specimens which Dr. Abbott had shown him. The whole appearance of the specimens together with the eversion pointed to a singularly chronic, mild and long continued, catarrhal disturbance. There had been stenosis, retention, and gradually filling up with the discharges from the mucosa. The only thing of note in the sections stained by fuchsin was the presence of the so-called Russell's bodies—blastomycetes (?)—in considerable numbers. These bodies were supposed to bear some relation to chronic inflammation, or more correctly, several observers have noted their existence in cases of chronic inflammation.

Cystoscope.

Dr. G. E. Armstrong demonstrated on a phantom the use of the cystoscope and of the numerous attachments for it. Drs. Bell, Garrow, Springle and England described their experience with the instrument.

Electrical Burns.

Dr. J. M. Elder read a paper on this subject. (See page 18 of the January Number.)

Considerable discussion took place regarding the nature of the traumatism which acted in such a way as to cause death of some of the tissues at a considerable distance from the actual burn.

Tuberculosis of the Intestines.

Dr. C. F. Martin reported a case of tuberculosis of the intestines, in which there had been present a supraclavicular adenitis of the right side.

Stated Meeting, November 10, 1899.

J. G. Adami, M.D., President, in the Chair.

Drs. E. M. von Eberts and D. de J. White were elected ordinary members.

Removal of the Lower Half of the Rectum for Cancer.

Dr. Lapthorn Smith showed the patient the subject of a report to the society seven months previously. He had brought her before the society to show what good results were possible from this operation.

Pathological Specimens.

THE PRESIDENT showed specimens illustrating spontaneous healing of a perforated gall-bladder and a patent foramen ovale.

Cerebral Complications of Nasal Diseases.

DR. R. H. CRAIG read a paper entitled "Cerebral Complications Caused by Extension from Accessory Cavities of the Nose."

Etiology of the Nausea and Vomiting of Pregnancy.

DR. D. J. EVANS read a paper with the above title. (See page 93 of the February Number.)

Dr. J. C. Cameron thought the chief merit of the paper was that it suggested a theory which would give a physiological basis for the vomiting of pregnancy. The supposed cause had been shown to be present in menstruation and to be increased in pregnancy, where it might still remain within the physiological limits or pass the borderland and become pathological. The theory had also the merit of simplicity and originality; many have recognized the rhythmic contractions of the uterus but none hitherto have associated them with pregnancy.

Many of the theories regarding the origin of the vomiting of pregnancy were reviewed by various members each of whom was inclined to hold a different one.

Inversion of the Uterus.

DR. LAPTHORN SMITH reported this case.

Stated Meeting, November 24, 1899.

J. G. ADAMI, M.D., PRESIDENT, IN THE CHAIR.

Pathological Specimens.

DR. D. D. MACTAGGART showed a case of Rupture of the Diaphragm.

DRS. SCHMIDT and MARTIN exhibited the heart of an infant showing Aortic Stenosis.

DR. SHIRRES showed a case of Porencephaly in an old woman who had had no symptoms of cerebral trouble during her life time.

Obstruction of the Pancreatic and Common Bile Ducts.

DR. JAMES BELL reported this case which will be published later.

Traumatic Rupture of the Rectum in a Child.

DR. F. R. ENGLAND reported this case. (See page 107 of the February Number.)

Hammer Toe.

MR. G. A. CHARLTON, student of Medicine, read a paper entitled "On a Case of Hammer-Toe Affecting the Four Outer Digits of Either Foot." (See page 188.)

Stated Meeting, December 8, 1899.

J. G. Adami, M.D., President, in the Chair.

Œdema of the Hand and Arm after Amputation of the Breast.

Dr. A. E. Garrow reported this case.

A Case for Diagnosis.

Dr. F. J. Shepherd exhibited a man, 46 years of age, with two areas of ulceration, one upon the left malar eminence, involving the lower eyelid, and the other just above the eyebrow on the same side. The patient was attending the dermatological clinic of the Montreal General Hospital, and had been the subject of considerable difference of opinion as to whether the ulceration was a tertiary manifestation of syphilis or a case of lupus. Dr. Shepherd looked upon the case as syphilitic.

Dr. J. M. Elder stated that this patient had been under his care for a similar lesion, at the same site, some time previous, and treatment with large doses of iodide of potassium and mercury had brought about complete healing of the ulcers.

Dr. G. Gordon Campbell had been convinced that the case was lupus, both from the character of the lesions when first seen and from the fact that large doses of iodide of potassium had failed to produce any improvement, but, in view of Dr. Elder's previous experience of the case, he was forced to change his opinion and to regard it as syphilis.

Dr. Buller, from the appearance of the case and without any knowledge of Dr. Elder's experience with it, would have been inclined to believe it syphilitic.

Acute Suppurative Pancreatitis.

Dr. D. P. Anderson reported this case and exhibited the pathological specimens.

The Need of an Infective Hospital for Western Montreal and Suburbs.

Dr. John A. Hutchinson read a paper with the above title.

After considerable discussion in which all the speakers were unanimously in favour of the establishment of such an institution, the following resolution was passed :—

That this society is convinced that the time has arrived for the establishment of a hospital for infectious diseases in the western part of the city, and that steps should be taken immediately to carry out the design ;

That a committee be appointed by the President to obtain all information with regard to the care of patients suffering from infectious diseases (scarlatina, diphtheria, erysipelas, variola and measles) in Canadian, English and American cities; such information to consider

the management, support, isolation, transportation of patients, and all other matters pertaining to the maintenance of an infectious diseases hospital.

Removal of a Calculus from the Ureter.

Dr. A. E. Garrow reported this case and exhibited the stone.

Bacillus Coli Communis in Pernicious Anæmia.

Drs. Anderson and Ford gave a preliminary report of the presence of the Bacillus coli communis in the stomach contents and mucosa of cases of pernicious anæmia.

Stated Meeting, January 5, 1900.

J. G. Adami, M.D., President, in the Chair.

Discussion on Gonorrhœa.

Dr. John McCrae, who was to have presented the "History of Gonorrhœa," being absent, the paper was taken as read. (See page 161.)

Dr. A. E. Garrow contributed a paper upon "Acute Gonorrhœa and its Complications in the Male." (See page 164.)

Dr. Smillie limited his treatment to irrigations, using a soft rubber, pointed nozzle and a solution of permanganate of potassium, and obtained good results by this method. At first, two irrigations were given daily, then once a day, and less frequently for three weeks to a month. If commenced early, such treatment would limit the disease to the anterior urethra.

Dr. J. M. Jack believed in moderate treatment, and thought that irrigation would cut short the course of the disease.

Dr. Armstrong contributed a paper on "Chronic Gonorrhœa (stricture, etc.) in the Male." (See page 169.)

Dr. A. E. Garrow advocated treating stricture in the deep urethra by dilatation with section of the stricture afterwards. He believed that strictures in which the treatment ceased with dilatation, recurred in a few months. In a case of impermeable stricture, to which he referred, he had done the suprapubic operation with retrograde catheterisation. In penile strictures he thought cutting was demanded.

Dr. F. J. Shepherd agreed with Dr. Armstrong regarding treatment by gradual dilatation. If a filiform bougie was once introduced one could get in any instrument afterwards. In cases with old impermeable strictures he would cut down and dissect through the stricture. His experience was that strictures that had been cut frequently recurred and that there were no worse results after dilatation than after cutting. He agreed also with Dr. Armstrong that great care should be used in catheterisation.

Dr. Smillie approved of the method of gradual dilatation. He had seen two cases of severe hæmorrhage after cutting with the Maisonneuve instrument.

Dr. Armstrong, in reply, stated that he had never had hæmorrhage after the Maisonneuve, which he considered a most satisfactory instrument.

Dr. C. F. Martin discussed the "Remote Gonorrhœal Infections."

A letter was read from Dr. Conerty, of Smith's Falls, in regard to a fund which was being raised to assist him in defending himself against a suit for malpractice, and an accompanying circular setting forth the object of establishing a defence fund.

The following resolution was passed :—

That the society cannot officially assist in subscribing to the fund for Dr. Conerty, but that the individual members are invited to do so ; and further, that the time is ripe for the formation of a Dominion Defense Association and the society is prepared to support such a movement.

A letter was read from a wholesale milk dealer suggesting that the society should undertake the examination of the milk supply of the city. It was referred to the Council for a report.

Stated Meeting, January 12, 1900.

F. R. England, M.D., Vice-President, in the Chair.

Dr. J. Barclay was elected an ordinary member.

Continuation of the Discussion on Gonorrhœa.

Dr. James Stewart read a paper entitled "Gonorrhœal Arthritis." (See page 174.)

Dr. William Gardner read a paper on "Gonorrhœa in the Female."

Dr. J. C. Cameron contributed "Gonorrhœa in the Pregnant Woman." (See page 178.)

Dr. Frank Buller read a paper entitled "Gonorrhœa in Relation to Diseases of the Eye." (See page 185.)

Stated Meeting, Jan. 26, 1900.

J. G. Adami, M.D., President, in the Chair.

Dr. F. W. Harvey was elected an ordinary member.

Report of the Council on Milk Inspection,

The following report was presented :—

The matter of milk inspection having been brought before your council, and further, it having been brought before the council that in

New York, Boston, and other large cities in the United States, the medical societies have taken up this matter; and further, seeing that at the present time in this city the status and the functions of the health department are such that that department cannot be expected to satisfactorily take up this matter:

Your Council hereby recommend that a competent bacteriologist be appointed by this society, to be known as the bacteriologist appointed by the Montreal Medico-Chirurgical Society for the inspection of milk, who, under the control of this society, shall be empowered to make bacteriological or other examination of milk for any dealer or private individual who applies for such examination and guarantees the payment of a fee of such an amount as is approved by this society, and who, further, shall issue certificates as bacteriologist of this society in regard to his findings in the different cases.

Association for Medical Defence.

The following report was submitted:—

That this society realizes that to be the subject of a suit for blackmail is both socially and pecuniarily a matter of the utmost gravity for any member of the profession:

That it is in the interests of the profession as a body to protect its individual members against such actions:

That the mere existence of a medical defence association is a strong deterrent against the bringing of such actions:

That, nevertheless, suits for blackmail are relatively and happily infrequent, and that thus, as experience in the Old Country shows, when once such an association is started, there is little general enthusiasm with regard to prompt payment of annual fees, (which there amount to one pound sterling):

That there is little likelihood that an association demanding an annual subscription would meet with continued support.

Your Council would, therefore, conclude that some other scheme has to be sought after and would suggest a scheme somewhat of the following nature, to wit:—

That there be established a Dominion Defence Association with president and secretary-treasurer; that in each province there be established a branch of this association with provincial vice-president and secretary-treasurer and council of two or three; that the meeting of this main body be annual, to coincide with the meeting of the Canadian Medical Association; that the meetings of the local branches be called as necessity arises.

That the conditions of membership shall be the payment of an entrance fee of $5.00, and no subsequent regular annual fees, save if it be

found at any time that the amount obtained from these entrance fees is insufficient to cover the cost of defending cases in any given year; that then the members be assessed throughout the Dominion, the sum not to exceed two dollars ($2.00) per annum. That failure to respond to this assessment within one month shall, *ipso facto*, remove said practitioner from membership and from benefits of such association, and for renewal of such membership the consent of the central council alone shall be effectual, and payment of entrance fee with assessment in arrears shall be required.

The report of the council was adopted and a committee appointed to elaborate it further and report at a later date.

Double-headed Monster.

The President exhibited a case of dicephalus tribrachius of which Dr. Girdwood showed stereoskiagraphs.

Disability and Disease Due to Accident.

Dr. Wyatt Johnston read a paper on this subject which will be published in the April Number.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK, JAMES STEWART,
A. D. BLACKADER, J. GEORGE ADAMI,
GEO. E. ARMSTRONG, G. GORDON CAMPBELL,
WILLIAM GARDNER, FRANK BULLER,
F. G. FINLEY, H. A. LAFLEUR,

WITH THE COLLABORATION OF

WYATT JOHNSTON. T. J. W. BURGESS, H. S. BIRKETT,
C. F. MARTIN, J. W. STIRLING, J. C. WEBSTER,
J. M. ELDER, F. A. L. LOCKHART, KENNETH CAMERON,
D. J. EVANS, W. F. HAMILTON, C. W. WILSON.
A. E. GARROW, E. J. SEMPLE, A. G. NICHOLLS.

VOL. XXIX. MARCH, 1900. No. 3.

ON THE DOMINION REGISTRATION BILL.

To us who know Dr. Roddick and who have followed step by step the evolution of his bill, the one dominant impression conveyed and, indeed, stamped upon our minds from the first moment of its inception to the present moment, has been the constant and conscientious endeavour to frame such a measure as should be acceptable to all classes of the profession in all parts of the Dominion. Whether it is possible to do this may be debatable; there are undoubted difficulties in the way, but if the object of this measure be approached in the right spirit we firmly believe it possible. We would, however, emphasize this fact, that before everything else our colleague has made this his great endeavour and kept it in the forefront with no secondary or underlying object. And what is more, if any of the clauses of the projected measure can be shown to be harmful to any vested interests or to endanger any branch of the profession, he will be the first to so modify the clause as to remove all possibility of harm or of misconstruction.

While here we may be traversing old ground, it will, we think, be well to point out that the measure originated as a consequence of the dissatisfaction which all broad-minded men feel in the present condition of our profession in Canada. There is something miserably petty and

second class—not to say 'bourgeois'—in the trammels and regulations whereby each province shuts itself off from the rest of the Dominion, enacts its own laws bearing upon the conditions of medical practice, determines its own standard of education for a license and hinders those licensed by other provinces from setting foot within its boundaries. That same spirit which brought about confederation and which is now rapidly making Canada—as mistress in her own house and that house not divided against itself (to mix up two metaphors of very diverse origin)—a power in the world at large, that same spirit makes us of the medical profession demand that the exercise of our profession in its broader details be regulated upon national rather than upon provincial lines. Were medicine a trade, adventure, or other mercantile concern, the case might be different. It might then be defensible to organize the medical men of each province into a closed corporation and to rigorously prevent all outsiders from poaching upon the provincial preserves. But the first aim of the physician is to be of service to his fellow men; commercial conditions are of right but secondary. Ours is *par excellence* the liberal profession, and this being so, regulations regarding practice should be most liberal.

How absurd it would seem were any religious body in any province to exact that no outsider could exercise religion in that province save under pains and penalties, that no one could minister to the mind diseased save and except he had passed each and all of the examinations of the provincial Bishops or other court of examiners. What should we think of the provincial Presbyterian Assembly of British Columbia for example, if it refused to allow a minister to be called from Prince Edward Island, because in his student days he had not attended a course of lectures upon the doctrinal and other differences between the "Moderates," the "Anti-burghers," the "Auld Lichts," the "U.Ps., &c.," or of the provincial Synod of the Province of Ontario, if it forbade the Bishops to license a former student of the Diocesan College in this city because the Montreal curriculum did not include a course of instruction upon the proper conduct of Mothers' Meetings with attendance, and practical work at twenty of the same? We surmise that the verdict would be that the Provincial Assembly, as a body, were a set of sempiternal fools, and that (heedless of the contradiction in terms) we should hold the Synod as damned as it was divine. The one thing needful is a guarantee that all admitted to practice medicine in the Dominion have reached a certain standard of education. Remembering the great responsibility of the practitioner it is necessary that that standard be high.

At the same time in the proposed measure we are bound to take into account the provincial powers and provincial privileges already existing, and, in order to put an end to the present unworthy condition of

affairs, have to develop a scheme which, without infringing upon the powers or even the susceptibilities of provincial legislatures, shall be of general application.

To do this demands statesmanship of no mean order, demands an intimate knowledge of the conditions of the profession in all parts of the Dominion, demands the greatest care and deliberation in drawing up each individual clause of the projected act, and demands, lastly, complete disinterestedness and absence of *parti pris* on the part of the framer. If any one has the capacity and has endeavoured to fulfil all these demands, it is our colleague ; and if anything appears on the face of the projected measure to contradict these aims, it certainly has not been inserted with intent to cause strife or dissatisfaction.

As a consequence, we think that the measure, a draft of which we here print, will be found generally acceptable. Nay more, it only appears in its present form after having been subjected to the leading members of the profession from one end of the Dominion to the other. Still, despite all the care that has been taken, we are sorry to find that, in this province particularly, it has been subjected to very vigorous criticism, and what is more, that criticism, while largely we think unmerited and not germane, does contain certain elements that have force and cannot be passed over. In other words we think that certain clauses should be revised so as to show with absolute precision, both that the aim of the promoters is in no sense to infringe upon provincial and racial privileges, and to guard against the Bill, if passed, being employed by politicians as a lever to undermine the aforesaid privileges.

We would, however, assure the *Bulletin Medical* and our Quebec confrères that the first and only object in the projected bill is to improve the status and benefit the profession from one end of the Dominion to the other, and that there is no thought of the projected federal council interfering in the medical education in the various provinces, save and except in connection with the federal license, and no thought of so wording the measure as to make it subserve political ends. It is because this idea so filled the minds of the framers that the wording, which we admit is defective, of Section 4, Clause a. (not Clause c as stated in the *Bulletin Medical*), comes to be what it is. The defective nature of that paragraph has already been pointed out, for instance, at a recent meeting of the Montreal Medico-Chirurgical Society. In what is practically the preamble to the Bill, it was distinctly a mistake not to state first and foremost, the main object of the Council, which main object is to provide a means whereby students of medicine in the various provinces can obtain a license which will permit them to present themselves before the provincial councils and obtain the provincial license to practice without further examination.

"The assimilation and unification of the various standards of qualifications established by the several provinces of Canada as conditions of admission to the study and practice of medicine," surely only refers to the proposed Dominion license and the course of study necessary before the student is admitted to the examinations of the federal council. Certainly it is altogether no part of the proposed powers of the Dominion medical council to determine what shall be the standard of matriculation of candidates presenting themselves before the different provincial medical councils.

Paragraph h, of Section 10, which bears upon the powers of the council and reads, "that the council may from time to time make, repeal, alter and amend rules, orders and regulations *not contrary to law or to the provisions of this Act,* for or with reference to the following purposes :—The admission, enrolment, registration of practitioners and students of the medical profession, etc.,...." clearly only refers to admission, enrolment and registration of those qualified under this act, and does not give the Dominion Council any power to regulate the qualifications of medical students in general. And similarly in paragraph i., "the qualifications to be required from all persons desirous of being registered either as practitioners or students *under the authority of this Act,* including the establishment, maintenance and effective conduct of examinations for ascertaining whether such persons possess the qualifications required, etc.," most clearly only refers to the qualifications to be exacted from those applying for the Dominion license and does not in any sense refer to qualifications to be exacted by the various provincial bodies. All that is demanded for the Dominion Council is that it shall have powers to enforce and to ensure that those applying for its license shall have undergone a course and passed examinations satisfactory to the council. Failing this, the applicant, if he still wishes to practice in the Dominion is not by this law prevented from applying to any province to obtain its provincial license.

It is, we think, unfortunate that Dr. Simard so refers to these last two paragraphs, by leaving out the clause we have italicised, as to give the impression to those who do not carefully follow up his argument, that power is asked to control these matters of education generally. His argument is to prove that power is asked to obtain control over matters strictly educational in the different provinces—certainly so far as regards a Dominion license, control is asked, but no farther. Dr Simard must see that to this extent control is absolutely essential and that the writer in the *Union Medicale* necessarily took this for granted. But, also, Dr. Simard must acknowledge that if the law be carried out along the lines laid down there will be no interference or chance of interference in the general course of education of those taking

a provincial license. Yet if any wording can make it more clear that the provincial rights are not to be infringed upon by the federal body, it would be well that those words be inserted.

One of the strong points in the Bill, however, is that it clearly ensures that the standard demanded of those presenting themselves for the Dominion examination shall in no case be lower than that demanded by any individual province. Clause i of Section 10, reads :—"....; provided, however, that the requirements of the curriculum shall not at any time be lower than the requirements of the most comprehensive curriculum established at the same time for the like purpose in any province, nor shall the standards of examinations either preliminary or professional be lower than the highest standard for the like purpose established at the same time for the purpose of ascertaining qualification for registration within any province." That, certainly, is the object of the promoters, and thereby another of the objections taken to the Bill is removed; as again is the idea that the Bill is but a plot leading quietly but surely to the attainment of legislative union and imperialism. There is no endeavour in the Bill to do away with provincial autonomy, and indeed the very success and the benefits which have followed from political confederation should now follow the medical confederation which is proposed.

Dr. Simard may speak slightingly of the benefit to be obtained by allowing a few physicians to cross the Ottawa and Beaudette rivers with impunity; we should have thought that the wider view would have appealed to him; namely, that recognizing the increasing settlement of French Canadians in Eastern Ontario and Manitoba and elsewhere, he would have seen the distinct benefit offered by this Bill to those of his race. Under present conditions a French physician desiring to practice in Ontario has to pass the examination, in English, of the Ontario Board. If this Bill passes, all that he will have to do will be to present himself before the Dominion Council and ask for an examination in his own language ; is not this a very definite gain ?

The council would be bound to take into account the educational traditions of the two people, to recognize that the general higher education of our French speaking confrères differs in many important respects from our own, and to devise an examination accordingly. And so, also, with regard to the methods of conducting the different courses of the medical curriculum ; here again the different modes of procedure will have to be taken into account.

If these considerations be taken into account, we fail to see how our French colleagues can see in this Bill anything but what is of direct benefit to them and nothing which will detract from their privileges.

J. G. Adami.

DRAFT OF PROPOSED
ACT TO INCORPORATE THE MEDICAL COUNCIL OF CANADA.

An Act to Incorporate the Medical Council of Canada.

Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows :—

SHORT TITLE.

1. This Act may be cited as "The Medical Act of Canada."

DEFINITIONS.

2. In this Act, unless the context otherwise requires the expression "Province" shall be held to include the North-West Territories; the expression "Provincial" shall be held to mean not only Provincial but also North-West Territorial, the expression "medicine" shall be held to include surgery and obstetrics, the expression "medical" shall be held to include surgical and obstetrical, and the expression "The Council" shall be held to mean the Medical Council of Canada.

INCORPORATION AND PURPOSES.

3. The persons from time to time appointed or elected or otherwise being under the provisions of this Act members of The Medical Council of Canada are hereby constituted a Corporation, under the name of "The Medical Council of Canada."

4. The purposes of the Council shall be to promote and effect :

(*a.*) the assimilation and unification of the various standards of qualification established by the several Provinces of Canada as conditions of admission to the study and practice of Medicine.

(*b.*) the establishment of a Register for Canada of Medical practitioners and students, and the compilation, publication and revision from time to time of such register.

(*c.*) the determination and fixing of the qualifications and conditions necessary for registration, including the courses of study to be pursued, the examinations to be undergone, and generally the requisites for registration.

(*d.*) the establishment and maintenance of a Board of Examiners for the examination of such persons and for the granting of certificates of qualification.

(*e.*) the establishment of such a status of the Medical profession in Canada as shall insure recognition thereof in the United Kingdom of Great Britain and Ireland and enable Canadian practitioners to acquire the right to registration under the Acts of the Imperial Parliament known as the "Medical Acts."

(*f.*) the enactment by the consent and at the instance of the Medical

Councils or Boards of the various Provinces of Canada, of such Provincial legislation as may be necessary to supplement the provisions of this Act and to effect all or any of the foregoing purposes.

(*g.*) the encouragement of study and research in Medical literature, the establishment of a uniform standard of Pharmacopœia, the publication of transactions and other documents, including the collection and publication of Vital Statistics, the formation of a Canadian Medical Museum, and generally the advancement of Medical science and practice and all matters tending to promote public health throughout Canada.

5. The Council may acquire and hold such real estate and personal property as may be necessary or expedient for the purposes of the Council or of providing a revenue therefor and may sell, lease or otherwise dispose of the same, but the annual value of the real estate owned by the Council and held for the purposes of revenue only shall not at any time exceed the sum of one hundred thousand dollars.

COMPOSITION OF COUNCIL.

6. The Council shall be composed of three members from each Province now or hereafter being a Province of Canada, who shall be chosen as follows, viz.:—one from each such Province shall be appointed by the Governor-General in Council, one from each such Province shall be elected by the Medical Council of such Province, and the President of each Provincial Medical Council shall be *ex officio* a member of the Council.

Provided, however, that no one shall be appointed, elected or *ex officio* a member of the Council or continue in office as such member unless he

(*a.*) reside in the Province for which he is an appointed, elected or *ex officio* member ;

(*b.*) be a duly registered member of the Medical Profession according to the law of the Province which he represents ;

(*c.*) be duly registered as a Medical practitioner in the register to be established under the provisions of this Act, but this latter qualification shall not be required of any of the members originally composing the Council.

(*d.*) Provided, however, that no Province shall be represented upon the Council either by appointed, elected, or *ex officio* members until the Legislature of that Province shall have enacted in effect that students and medical practitioners duly registered as such by the Council, may, without further study, be registered as students or duly qualified medical practitioners within and under the laws of such Province.

7. The term of office for appointed members shall be four years.

1. Elected members shall remain in office until the expiration of the

term of office of the members of the Provincial Medical Council by whom they are elected.

2. *Ex officio* members shall be members of the Council so long as they continue to hold the office in virtue of which they become such members.

3. Any member may at any time tender resignation of his membership by written notice thereof to the President or to the Secretary of the Council. Upon acceptance of such resignation by the Council the Council shall forthwith give notice in writing thereof, in case of an appointed member to the Secretary of State for Canada, and in case of an elected or *ex officio* member to the Secretary of the Medical Council for the Province which such member represents.

4. Any person who is or has been a member of whatever class may, if properly qualified, become an *ex-officio* member or be re-appointed or re-elected, but no person shall at one time serve as a member in more than one capacity.

5. In the case of members of the Council who have been appointed or elected and whose term of office is about to expire successors may be appointed or elected at any time within three months before the expiration of such term, provided that where any vacancy exists in the membership of the Council by reason of any term of office having expired or otherwise such vacancy may be filled at any time.

6. If the proper Provincial authority to elect a member of the Council fail to do so, or fail to elect a properly qualified member, or fail to cause the name of the member elected to be certified to the Secretary of the Council within a reasonable time after such election might have been made, then, after due notice from the Council requiring such Provincial authority to make and certify such election, the Council may thereupon, in case the default continue, itself elect such member in lieu of the proper Provincial authority.

7. A member appointed or elected to fill a vacancy caused by death or resignation shall hold office in all respects as the person in whose place he is appointed or elected would have held office and for the remainder of the term for which that person was appointed or elected.

8. In case of any doubt or dispute as to the qualification or the validity of the election of any member the Council may enquire into and decide such doubt or dispute and the decision of the Council shall be final.

OFFICERS.

8. The Council may from time to time

(*a.*) elect among its members a President, a Vice-President and an Executive Committee.

(*b.*) appoint a Registrar who may also if deemed expedient act as Secretary and Treasurer.

(*c.*) appoint or engage such other officers and employees as the Council deems necessary to carry out the objects and provisions of this Act.

(*d.*) require and take from the Registrar, or from any other officer, or employee, such security for the due performance of his duty as the Council deems necessary.

(*e.*) fix the allowances, remuneration or salaries to be paid to the President, Vice-President, members, officers and employees of the Council.

MEETINGS.

9. The Council shall hold its first meeting at the City of Ottawa at such time and place as may be appointed by the Minister of Agriculture; and thereafter an annual meeting of the Council shall be held at such time and place as may from time to time be appointed by the Council.

1. Until otherwise provided by order or regulation of the Council, seven members of the Council shall form a quorum, and all acts of the Council shall be decided by a majority of the members present.

2. The President, or Vice-President, when in the chair, and the Chairman of any meeting of the Council or of any Committee of the Council shall have a casting vote in addition to his vote as a member of the Council or of the Committee.

RULES, ORDERS AND REGULATIONS.

10. The Council may from time to time, make, repeal, alter and amend rules, orders and regulations not contrary to law or to the provisions of this Act for or with reference to the following purposes, or any of them :

(*a.*) The purposes mentioned in section 8 of this Act.

(*b.*) The direction, conduct and management of the Council, and of its property, real and personal.

(*c.*) The summoning and holding of meetings of the Council, the times and places where such meetings are to be held, the conduct of business thereat, and the number of members necessary to constitute a quorum.

(*d.*) The powers and duties of the President and Vice-President and the selection of substitutes for them if unable to act for any cause at any time.

(*e.*) The tenure of office, powers and duties of the Registrar and of all other officers and employees.

(*f.*) The election and appointment of the Executive Committee and other committees for general or special purposes, the definition of their powers and duties, the summoning and holding of their meetings and the conduct of business by such committees.

(*g.*) Generally all fees to be required, paid or taken under this Act.

(*h.*) The admission, enrolment and registration of practitioners and students of the medical profession.

(*i.*) The qualifications to be required from all persons desirous of being registered either as practitioners or students under the authority of this Act, including the establishment, maintenance and effective conduct of examinations for ascertaining whether such persons possess the qualifications required ; the number, nature, times and modes of such examinations ; the appointment of examiners ; the terms upon which matriculation and other certificates from universities, colleges and other educational institutions, or from the governing bodies of other professions, shall be received as evidence of qualification ; the recognition of degrees or diplomas granted by any British, Canadian, colonial or foreign school, college or university ; the arranging and bringing into effect of any scheme or schemes of reciprocity as to registration with any British, Colonial or foreign medical licensing body or authority ; the dispensation of candidates from undergoing examinations either wholly or partially and generally all matters incident to such examinations or necessary or expedient to effect the objects thereof ; provided, however, that the requirements of the curriculum shall not at any time be lower than the requirements of the most comprehensive curriculum established at the same time for the like purpose in any Province, nor shall the standards of examinations either preliminary or professional be lower than the highest standard for the like purpose established at the same time for the purpose of ascertaining qualification for registration within any Province.

(*j.*) The terms, conditions and circumstances under which medical practitioners shall be entitled to registration under this Act in cases where such medical practitioners are duly registered or licensed under the Medical Acts of the United Kingdom or under the laws of any British possession other than Canada or under the laws of any foreign country which British possession or foreign country extends reciprocal advantages to Canada.

(*k.*) Generally all matters which it may be necessary or expedient to provide for or regulate in pursuance of the purpose of this Act and in furtherance of its general intention.

11. A copy of any such rule, regulation or order certified by the Registrar or Secretary under his hand and the seal of the Corporation may be received in evidence in any court of justice without proof other than the production of a copy purporting to be so certified.

BOARD OF EXAMINERS.

12. At each annual meeting of the Council, the Council shall ap-

point a board of examiners, to be known as "The Medical Council of Canada Examination Board," whose duty it shall be to hold the examinations prescribed by the Council.

2. The members of the board of examiners shall be eligible for re-appointment.

EXAMINATIONS.

13. There shall be two classes of examinations to be held under this Act, namely, the preliminary or matriculation examination, and the professional examinations.

1. The subjects of these examinations shall be decided by the Council, and candidates for examination may elect to be examined in the English or French language.

2. All practical and clinical examinations shall until otherwise decided by the Council be held in the cities of Montreal and Toronto alternately.

REGISTRATION.

14. The Council shall cause to be kept by the Registrar under the direction of the Council a book or register to be known as "The Canadian Medical Register," in which shall be entered in such manner and with such particulars as the Council may direct the names of all persons who have complied with the requirements of this Act and with the rules, orders and regulations made by the Council respecting registration under this Act and who apply to the Registrar to have their names so entered.

15. Except as otherwise provided by this Act every one shall, upon payment of the fees prescribed by the Council in that behalf, be entitled to be registered either as a medical practitioner or student as the case may be who passes the examinations duly prescribed by the Council and otherwise complies with all the conditions and regulations requisite for such registration as prescribed by this Act and by the Council under the authority of this Act.

1. Any person who has been registered as a medical practitioner in any Province in Canada for the full term of ten years next preceding the date of his application for registration under this Act shall be entitled to be registered under this Act as a medical practitioner without examination upon payment of the fees and upon compliance with the other conditions and regulations for such cases prescribed by the Council.

2. Any person coming within any of the classes of registered or licensed practitioners to which paragraph (*j*) of section 10 of this Act applies shall be entitled to be registered upon complying with the orders and regulations established by the Council in that behalf.

16. Any entry in the register may be cancelled or corrected upon the ground of fraud, accident or mistake.

17. In any case of an application for registration or for correcting or amending any entry upon the register the applicant, if aggrieved by the decision of the registrar, may appeal to the Council and the Council shall hear and determine the matter; but all applications to cancel or strike off entries from the register made adversely to the person whose registration it is desired to affect shall be by the registrar referred to the Council and the Council shall after due notice hear and determine all such applications.

1. The decision of the Council in all matters affecting the register, the entries made or to be made therein, and the right to registration, whether upon appeal or otherwise, shall be final and conclusive.

18. If it is made to appear to the Council that any person registered under this Act has been convicted either in any part of Her Majesty's possessions or elsewhere of an offence which if committed in Canada would be an indictable offence under "The Criminal Code, 1892," or that he has been guilty of any infamous or disgraceful conduct in a professional respect, then, whether such offence shall have been committed or such conviction shall have taken place or whether such infamous or disgraceful conduct shall have occurred either before or after the passing of this Act or either before or after the registration of such person, the Council shall direct the Registrar to erase the name of such person from the register. Provided, however, that if a person registered under this Act shall likewise have been registered under the laws of any Province and such Provincial registration shall have been cancelled for any of the causes aforesaid by the authority of the Medical Council for the Province where he shall have been so registered, it shall then be competent to the Council without further enquiry to direct the registration of such person under this Act to be likewise cancelled.

1. The name of a person shall not be erased under this section

(*a.*) because of his adopting or refraining to adopt the practice of any particular theory of medicine or surgery; or

(*b.*) because of his conviction out of Her Majesty's possessions of a political offence against the laws of any foreign country; or

(*c.*) because of his conviction for any offence, which, though coming within the provisions of this section, is, in the opinion of the Council, either from the trivial nature of the offence or from the circumstances in which it was committed insufficient to disqualify a person from being registered under this Act.

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THE PLAGUE.
A PROSPECT AND A RETROSPECT.*

BY

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Studying the history of the Plague in Europe it has been perhaps natural to infer that this dread disease has receded from the civilized areas of the Temperate Zone never to return in epidemic form. We see

* NOTE :—In the following pages I have attempted to bring together matters of direct use to those desiring to have a general idea of our present stand-point in connection with the Plague. I am indebted more especially to :—

The Plague in India, 1896-97, compiled by R. Nathan, Indian Civil Service. IV. Vols., large 8vo. with maps and diagrams. Printed at the Government Central Printing Office, Simla, 1898. Price per set of four Vols., 15 Rs. or £1. The first volume of these more especially gives a most valuable account of the previous history of the Plague in India, description of the Plague, its course and characteristics, and of the measures taken in India to prevent the spread of infection.

Müller & Pöch, Die Pest. Nothnagel's Specielle Pathologie, Vol. No. V., Pt. 4, Vienna, 1900. This is on the whole a most valuable study on the subject, but is in its earlier part based perhaps a little too much upon the work of previous Austrian and German writers, Griesinger for example, and does not sufficiently acknowledge the studies of those of other nationalities—a fact which may in part possibly be explained by the fact that Dr. H. F. Müller, the original author, died of the disease in Vienna before he had revised, or indeed, had nearly completed the work.

Daniel Defoe. A Journal of the Great Plague in London (1665), first printed, London, 1720, reprint, Temple Classics Series, Dent & Co., London, 1900. 75 cents.

Report of the Indian Plague Commission on Haffkine's Anti-Plague Inoculation. Abstr. and editorial in *Brit. Med. Journ.*, Feb. 24th, 1900, p. 455.

Lustig & Galeotti. Remarks on Preventive Inoculation Against Bubonic Plague. *Brit. Med. Journ.*, Feb. 10th, 1900, p. 311.

its last great outburst in England in 1665,* the last outburst in Western Europe at Marseilles in 1721, and in Eastern Europe at Moscow in 1771, and until the closing years of the century in South-Eastern Europe alone—in Turkey—has the plague shown itself epidemically.

But at the present juncture it is right and reasonable to keep in mind that ours may be a false security. We ascribe our immunity to improved hygiene and superior cleanliness, together with (as it would seem from the relative mortality among those of different nationalities stricken of late years in Hong Kong and India) a superior power of resistance in the individual, this resistance or relative insusceptibility being possibly the outcome of better food and consequent more robust health. A more careful study of the facts in relation to the incidence of the Plague may well make us pause. If there is one feature in the history of the disease standing out more than any other, it is the remarkable diversity in the symptoms. In all epidemics there has been the one feature of bubonic enlargements, if not in every case, at least in a considerable proportion of those affected, and the mortality has varied greatly. Now, as in the Black Death, the disease has been of the most virulent septicæmic and hæmorrhagic type; now, as at Bombay in the present epidemic, pneumonic disturbances have been more prominent, and now, as in what the Germans call the "Schlundpest," laryngeal disturbances; indeed, as Cantlie states, a succession of outbreaks in the same city seldom preserves the same type. Bacteriological study of the germ shows us that we are dealing with a microbe peculiarly polymorphic and variable in all its properties. Hence, even if certain races are relatively refractory to the germ in one epidemic, it is well

W. J. Simpson. The Plague in India. *Brit. Med. Journ.*, Sept. 24th, 1898, p. 853.

Haffkine & Bannerman. The Testing of Haffkine's Plague Prophylactic in Plague-stricken Communities in India. *Ibid.*, p. 856.

L. F. Childe. The Pathology of Plague. *Ibid.*, p. 859.

Hankin. Note on the Relation of Insects and Rats to the Spread of Plague. *Cbl. f. Bakt. 22*, 1897, p. 437.

Hankin & Leumann. A Method of Rapidly Identifying the Microbe of Bubonic Plague. *Ibid.*, p. 438.

Bennett & Bannerman. Inoculation of an Entire Community with Haffkine's Plague Vaccine. *Indian Medical Gazette*, Vol. 34, No. 6, June, 1899.

James Cantlie. The Plague, *The Practitioner*, November, 1899, p. 522. I did not come across this article, having mislaid the reference, until my article was practically complete. In a most clear manner Cantlie takes up the matter very much after the lines here followed and the article is well worth studying by those who wish to obtain a general idea of the nature of the condition written by one, who, in Hong Kong, had abundant opportunity of studying cases.

* As Simpson points out it is not correct to regard this as the last year of the Plague in England—for thirteen years after the great fire in 1666 cases of the disease continued to present themselves.

within the bounds of possibility that, by passage, for example, the germ may have its virulence increased to a point at which racial insusceptibility becomes an absent quality. In the epidemic at Surat from 1684 to 1689, no Englishman was attacked, but in Bombay in 1690, of 800 Europeans only 80 were left, among them 6 civilians, 6 commissioned officers and not quite 40 English soldiers.

What it is that causes variation in virulence and effects we are still very far from knowing—we have, however, to recognize its existence in the Plague as in influenza, and, to give a very present instance, in small-pox. For in this respect nothing can be more instructive than the curiously mild epidemic of small-pox which is now spreading through the Northern States and has made its appearance in Ontario and parts of our own Province of Quebec. Nor again does the fact that two centuries and more have elapsed since the Plague visited Atlantic shores, afford any absolute indication that it has retired never to return. As Dr. Simpson pointed out at the last meeting of the British Medical Association, even in the crowded, painfully insanitary and peculiarly vulnerable eastern cities, while the Plague when once it enters may linger for several years, periods of a century or more may intervene between separate epidemics. Bombay itself was free for 184 years, Moscow, to come nearer home, for 150 years, figures which are not particularly reassuring.

As now the Plague has manifested itself in no uncertain way upon the Atlantic coast of Europe—in Portugal,—not to mention along the Pacific coast, from Japan to the southermost parts of China ; nay more, has assumed an epidemic type in parts of Brazil and the Argentine, we in Northern America must no longer live in a fool's paradise of assured freedom from danger. In saying this I do not wish to pose as an alarmist. As Müller and Pöch point out, in Marseilles in 1721, there were 86,000 deaths out of a population of 247,000, a mortality of 34.8 per cent., and in London in 1665, 68,596 out of a population of 460,000, a mortality of 14.9 ; Defoe, it is true, gives us the popular impression of his time that this figure is too low and that 100,000 is a true estimate, or a mortality of over 20 per cent. In Canton, on the other hand, in 1894, it is estimated that 140,000 died, or 5 per cent. of the inhabitants. In Bombay in 1896-7, with the more rigorous measures adopted there by the authorities, 19,849 died out of a population of 846,000, a mortality of only 2.3. If in a city so notoriously unsanitary as Canton, and among a people so predisposed to the disease as the Chinese (it is estimated that over 90 per cent. of the Chinese attacked in Hong Kong succumbed), the mortality was only 8 per cent., if again in the continuation of the same epidemic in India, the mortality was brought down by preventive measures to 2.3 per cent.; if again, as the rareness of

hæmorrhagic cases would seem to indicate, the present epidemic is of a relatively mild type, then with our present powers of quarantine and segregation, even did the pestilence gain entry into the country, there is, in my opinion, singularly little chance of its spreading, unless indeed—and this is on the whole unlikely—it suddenly increases greatly in virulence. All that I wish to urge is that reasonable precautions should now be taken to guard against its entrance, and that the present is a particularly favourable time to seek out and remove the weak spots in our hygienic defences, and if, as is the case in Montreal, there are foul and utterly unhealthy areas in the city, now is the acceptable moment for cleansing those areas.

It follows therefore that the quarantine officers at all our ports, both on the Atlantic and on the Pacific, receive the fullest instructions to be on guard against the entrance of infected individuals or infected goods, and that everywhere, but more especially in our seaport towns, the ordinary practitioner be on the alert to recognize the first case, or first symptoms of the disease. We are glad to assure our readers that under the able direction of Dr. Montizambert, all official precautions are being taken. Only within the last few days a bacteriological laboratory has been inaugurated in connection with the quarantine service at Victoria, B.C., and Dr. Charles Higgins, Assistant Pathologist and Bacteriologist to the Department of Agriculture, a thoroughly capable and reliable official, has been placed in charge. At the Atlantic ports also care is being taken to obtain sure diagnosis and segregation of any suspected cases. It is opportune, however, to collect here into a brief and succinct form the main characteristics of the disease and the means of diagnosing and of preventing the spread of the same, so that the general practitioner be not perchance caught napping.

THE NATURE OF THE PLAGUE AND ITS CHARACTERISTIC SYMPTOMS.

What then is the plague? It is a disease caused by infection by a specific bacillus, manifesting itself more particularly as a malignant lymphadenitis, and its characteristic symptom, that which distinguishes it from all other epidemic diseases, is the production of buboes. Just as in cholera, the mucous membrane of the intestine is the tissue of election, and in small-pox the skin—so in the Plague it is the lymph glands which are especially picked out, and here, I may add, it is that the specific bacteria of the disease are to be detected in profuse abundance. But again, just as one may occasionally come across a case of typhoid in which there are no enlarged Peyer's patches, so occasionally, a case of plague presents no enlarged subcutaneous lymph glands—while, apparently more frequently than is the case with typhoid, the

disease may take on the pneumonic type.* For our present purposes, these cases, which are peculiarly fatal, may, I think, be neglected. The general history when the pestilence first reaches a country, is that the earlier cases tend to be mild and indefinite and of the bubonic type. This is well brought out in Defoe's classical account of the Great Plague in 1665, of which I here note a new and excellently printed edition in the now familiar "Temple Classic" Series. Like other epidemics this tends to begin insidiously, and as often the earliest cases of cholera appear to be nothing more than a somewhat more severe diarrhœa than normal, so the Plague may show itself first as a development of buboes, clearly non-venereal in origin, accompanied by little or but transient disturbance. As pointed out, I believe, by Cantlie, cases of slight fever accompanied by glandular enlargement were noted at Hong Kong before the plague was recognized there—and Simpson gives full details of similar cases in the Shropshire regiment which came to Calcutta from Hong Kong. The condition spread to other soldiers who had never been in Hong Kong and eventually terminated in cases of typical Plague.

It is not surprising that the heads of the Indian Medical Service refused to acknowledge that they were here dealing with the genuine disease. What I wish to point out here, is that cases of non-venereal bubo occurring in the out-patient room or in private practice, deserve now-a-days to be investigated and followed with particular care—more especially if those cases be accompanied by slight fever and a white coated tongue, red at the tip and edges. In short, any case of fever accompanied by marked glandular enlargements in either groin, axilla or neck, deserves thorough investigation.

The general experience of the Bombay epidemic is that buboes which

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* Cantlie distinguishes the following varieties of type :

1. The *Bubonic* form, "as a rule the first outbreak of Plague in a community is bubonic in type whatever it may become afterwards."

2. *Pneumonic.*

3. *Intestinal*, in which an intestinal flux occurs consisting of diarrhœa at the onset to be followed later by the appearance of blood, mucus and epithelium in the stools.

4. The *Cerebral*, in which delirium, often apparently of a suicidal type sets in early, with twitchings, tonic and clonic spasms, especially in children, loss of consciousness and deafness are more than occasionally manifest.

5. *Puerperal*, in which uterine hæmorrhage and miscarriage are the prominent features.

6. *Pestis Siderans*, rapidly fatal cases in which the usual clinical signs have not time to develop.

7. *Typhus Type*, resembling malignant typhus ; in the Tropics not unfrequently the symptoms of the two diseases are almost identical, even to the skin eruption.

8. *Pestis Ambulans.* A mild type of the disease frequently included under the heading of,

9. *Pestis Minor*, sporadic or even epidemic outbreaks of adenitis going on to suppuration with, however, little constitutional disturbance.

have gone on to well-developed suppuration, yield pus free from plague bacilli and as the only sure means of diagnosis in a doubtful case is the bacteriological, the study of a suppurating bubo is likely to yield no certain results. Examination must be made before suppuration develops and if this is not possible, recourse should be had to the agglutination test, for in the later stages of the disease the blood gains agglutinating properties. A drop of blood collected, as in Wyatt Johnston's method for typhoid fever, and sent to a bacteriological laboratory, may thus afford valuable information. In the earlier stage of the bubo, as already indicated, and in the surrounding sero-sanguinolent fluid abundant bacilli are present.

Passing from these cases of "Pestis minor," before indicating the main symptoms of the more virulent disease, a few words may be said with regard to the specific microbe and to the essential nature of the plague process.

THE PLAGUE BACILLUS.

The bacillus which was discovered by Kitasato during the epidemic in Hong Kong in 1894, has been abundantly proved to be the specific cause of the disease. It is present in large numbers in the buboes in the early stage of the disease and in the hæmorrhagic œdematous fluid surrounding them. It is from these that the bacilli can be obtained in the greatest abundance and diagnosis be made without difficulty. In well marked cases it is present also in the blood but here the individual bacteria are few and far between in any given specimen, and thus the failure to discover them in the blood is not by any means a positive indication that the individual is not suffering from the disease.

These bacilli are short and thick, with rounded ends and when grown outside the body frequently occur in short chains and from the deeper staining of the ends tend to appear like diplococci; they do not stain by Gram's method. They grow best at blood temperature upon all the ordinary media. The most characteristic growth is in slightly alkaline peptone broth, and more especially, as Hankin has pointed out, when a little butter fat has been added. The bacilli tend to grow round the fat droplets upon the surface and falling down form long festoons or stalactites, the old growths gradually accumulating at the bottom as a granular or grumous deposit, while the medium remains clear. Grown outside the body involution or degeneration forms show themselves with fair rapidity, and as Hankin points out, this tendency to involution may be made a means of rapidly identifying the microbe. If this be inoculated upon agar containing from 2.5 to 3.5 per cent. of common salt, involution forms will be found in an unmistakable way after a lapse of 24 hours. Hankin and Leumann have cultivated a large num-

ber of other microbes under like conditions and in none of them have they had any approach to the appearances presented by the Plague bacilli under these conditions of growth in salted media.

The bacillus is pathogenic for rats, mice, guinea pig, rabbits, flies and other insects, and is rapidly communicated from one animal to another. After death the bacilli are found in all the organs. Furthermore, it is rapidly communicated from one animal to another. Though I am inclined to think that too much is being made of this conveyance of the disease by means of rats, nevertheless, the relationship of disease among these animals to plague in man has been noted for centuries, nay more, as I previously pointed out in this Journal,* the fact of this relationship carries us back to about 1141 B.C. in our knowledge of the existence of the Plague.

A curious fact has recently been pointed out, namely, that the known danger of handling rats that have died of the disease extends at most for 24 hours; after this period they may be handled with impunity, and it is indicated, with a fair amount of probability, that the infection is by means of the fleas and parasites on the rat's body which pass on to the hands and clothes of those taking them up immediately after death, which also in a few hours have deserted the bodies, these becoming, therefore, relatively harmless.

THE DISEASE PROCESS.

We have, it would seem, to deal with an infection occurring most frequently through the skin. It is remarkable that the primary seat of infection is in the majority of cases, unrecognizable. Light is thrown upon this peculiarity of the disease by certain observations of Albrecht and Ghon, that the disease may be induced in susceptible animals by merely rubbing some of the virus over the skin, and this even when it has not been previously shaved. In such experiments no marked local reaction need result, but the animal rapidly succumbs. As Hankin (private communication in 1897), Childe and others have pointed out, in some cases a minute reddened papule going

* Adami—Montreal Medical Journal, Vol. 24, 1896, p. 995. Since writing that account of the Plague among the Philistines, and the Trespass Offering of the Golden Emerods (buboes) and Golden Mice, I have learnt that the Hebrew word translated mice, is one which equally refers to rats and small rodents in general. While it is true that mice like rats are affected during Plague epidemics, their wandering out to open places and dying there is not so marked as it is with rats, and thus, if this word refers to rodents in general, the case in favor of the disease among the Philistines and Israelites being the Plague, becomes even stronger. Probably as a result of my note on the matter being contributed in a "Retrospect" it has been largely overlooked. I was not a little interested to come across in last Saturday's *Evening Post* (New York), April 14th, an announcement heralding this same antiquarian discovery by the same writer of a paper presented recently to the Royal Society of New South Wales!

on to vesiculation, may be seen in the very earliest stages in the cutaneous area associated with the first lymph gland which shows enlargement (primary bubo) and here may be found abundant bacilli. One of Childe's cases is peculiarly instructive: The small unopened papule with sero-pus in its apex was found exactly upon the mid-dorsal aspect of the glans penis; from it pure cultures of the bacillus were obtained, which injected into a rat, caused its death from plague. In this case the inguinal glands *on both sides* were equally affected and enlarged to the size of walnuts. Hankin has communicated to me a somewhat similar case. Rarely the local reaction at the point of infection is more pronounced and a primary carbuncle with hæmorrhages, necrotic centre and surrounding œdema, has been observed. It would seem that Roux's statement is well based, that the more marked the local reaction, the less virulent the disease and the more favourable the prognosis; the virulent germ is not arrested locally, but is conveyed rapidly to the nearest lymph gland and there sets up the inflammatory reaction which results in the development of the primary bubo.

I am, I take it, wrong in saying the nearest lymph gland, for as in the case of Professor Aoyama, the primary vesicle may be upon the hand, the primary bubo in the axilla (with in his case a somewhat rare intervening lymphangitis). It is indeed not a little remarkable how rare are buboes in the popliteal and cubital spaces. Either the main body of lymph from the extremities does not traverse the glands situated in these spaces, or the different lymph glands exhibit varying reactions to the virus. Certain it is that the glands of the groin and of the axilla are far and away the commonest seats of the primary bubo.

Next most common are the cervical glands, an indication that infection may be through the tonsils, the mouth, or the nasal mucosa. Feeding animals with the pest bacilli leads much more frequently to the development of cervical buboes than to enlargement of the mesenteric glands. I shall refer later to infection through the lungs.

In general, the course of the disease may be described as, (1). Local infection unrecognizable, or if recognizable accompanied by a minimal local reaction. (2). Affection of one or more of the group of lymph glands associated with the area of local infection, which affection at first sets up at most local swelling and pain, but no general reaction, *i.e.*, the moment general symptoms set in the bubo is already a prominent feature. (3). Following rapidly upon this local production of a bubo there is generalization of the disease—diffusion of the bacilli and their products into the blood and supervention of general symptoms.

SYMPTOMATOLOGY.

I may now rapidly note down, the main symptoms of the disease:—

I. In general, the disease shows itself with remarkable suddenness; there is an initial severe rigor, intense headache with giddiness suddenly supervening upon apparently perfect health, and rapidly developing prostration. More rarely there is a prodromal period in which the patient feels somewhat out of sorts with slight headache, nausea, feeling of weakness in the limbs and it may be some pain, more especially upon pressure in the region where the primary bubo will eventually become manifest. The intense headache and rigors are accompanied by a dry hot skin, the eyes become sunken, the features drawn, and soon a typhoidal state developes with or without coma.

II. There is definite but not particularly high fever rising rapidly to, generally, from 102 to 104°F., with tendency to remissions in the early morning hours and exacerbations in the late afternoon and evening hours, the temperature, however, may never exceed 101°. In favourable cases there may be resolution by lysis, the curve resembling somewhat that of typhoid convalescence, or more rarely by crisis. Septic complications may induce a characteristic curve.

III. Save in the fulminant and pneumonic cases, in which a primary bubo tends to be absent, a bubo, most often in the groin, next most frequently in the axilla, or again less frequently in the neck region,—is to be made out from the very beginning of the illness. An inguinal bubo is most common in adults, a cervical in children. This is, indeed, *the* "token" of the disease. It is painful on pressure, surrounded by an œdematous area, may be only just palpable, but in general is from the size of a walnut to that of a goose's egg; the skin over it is glazed and may be hæmorrhagic and vesicular. In the immediate neighbourhood of this primary bubo there may be other markedly enlarged lymph glands (primary buboes of the second class as they are termed by Albrecht and Ghon), enlarged as a consequence of direct infection through the lymph and showing similar characters. Only very rarely are there bilateral primary buboes (*e.g.* where infection has been through the integument in the midline of the body). Eventually there may be a general enlargement of all superficial lymph glands, *secondary* buboes; but these again, with very rare exceptions, do not show the same large size and surrounding infiltration and hæmorrhages seen in the primary. They are evidently due to infection of the glands from the blood stream after the germs have become generalized.

IV. Other "tokens" are carbuncles and cutaneous hæmorrhages. The latter are only seen in very malignant cases, as in the "Black Death," the former may be primary, at the seat of what is evidently the primary infection, or secondary, due like the secondary buboes to general blood infection.

V. Nervous disturbances are marked, but are very variable. The

preliminary headache and giddiness have already been mentioned. The rest, in the main, are those of the "typhoid state." The giddiness is accompanied by a characteristic walk, as of a drunken man, that of cerebellar ataxia. Sensory disturbances show themselves in the main by apathy, sleepiness or, it may be, complete coma. The speech is slow, and "far away," the eyes dull and heavy ; delirium of a prolonged type, colourless (as Müller expresses it), as of a man enacting a prolonged dream, talking and gesticulating to imaginary individuals, is met with. And very characteristically this delirium often leads the patient to get out of bed and wander about aimlessly in the house or street. Defoe gives vivid pictures of this form. While the delirium may be acute, and sometimes of the suicidal, it is most often of the quiet form.

VI. The pulse from being, according to Aoyama, large and full and dicrotic at the start, soon becomes rapid, 120 and more ; in cases of unfavourable prognosis, small and of low tension ; in fatal cases Müller frequently counted it at 200 and over, indeed, as a case progresses to a fatal termination, the rate becomes more and more rapid. As Müller points out the plague virus is a strong cardiac poison and the pulse indicates very largely the potent effect of the disease in inducing cardiac weakness. Death would in the main seem due to direct action of the poison upon the heart muscles, or it may be, though this is not so likely, upon the cardiac nerves.

VII. Beyond epistaxis and pharyngeal (tonsillar) ulceration, the upper air passages are usually found unaffected. The lungs are usually intact, though there may at times be a certain amount of bronchial catarrh from the third or fourth day. The Bombay epidemic has, however, clearly proved the existence of one special type of Plague—pneumonic Plague. This form was first clearly differentiated by Forbes in the Pali plague of 1838, if not by Gilder at Ahmedabad in 1820. And there can be no doubt that the Black Death, the most terrible visitation known in history, was this most malignant form of the disease. At Bombay, L. F. Childe first called attention to its existence. Just as we have two main forms of anthrax in man, malignant carbuncle in which the primary infection is through the skin, and wool sorters disease (pneumonic anthrax), so it is with this disease. The patients present no very prominent pulmonary symptom ; there is a cough but not very frequent, the expectoration, however, is blood stained and contains abundant bacilli—and soon there is extreme dyspnœa with cyanosis. So far, in the relatively few cases that have been studied, there have been pleuritic pains but no accompanying herpes. In ordinary Plague the respirations may rise to 30 or 40—in this condition they may be as frequent as 60 to 75. The condition is one of a lobular pneumonia and the ausculatory and other signs correspond.

What is noticeable is that the lips are dry, while, according to several observers, the tongue has a whitish or chalky surface with reddened tip and edges and it tends to be swollen. The tonsils in general are markedly swollen and reddened—more rarely they are ulcerated. It must be remembered that the frequency of cervical buboes in children would seem to be related to more frequent infection through the mouth or tonsils, even more than through the nose. The gastric juice appears to prevent primary infection of the intestines. Persistent vomiting is by many regarded as an unfavourable sign.

VIII. Wilm, at Hong Kong, is the only authority who has recorded primary plague affecting the abdominal digestive tract; other authorities are inclined to regard this as peculiarly rare, if not non-existent. With regard to the stools they are either regular or more often there is a tendency to constipation. Cantlie, Wilm and others found diarrhœa frequent at Hong Kong in the earlier stages with blood and mucus present. At Bombay this was rare.

IX. The liver, spleen and kidneys present no constant disturbances recognizable clinically. According to Yamagiwa and other recent observers, the amount of urine is diminished, albumin is generally present, but in relatively small quantities. The urine is often of a dark colour and contains indican (Aoyama), chlorides are diminished. There would in short appear to be a not very marked febrile nephritis. Bacilli have frequently been found in the urine—hæmaturia is rare.

PROGNOSIS:

Cases are on record in which the individual without previous warning has dropped down as if struck by lightning (? heart failure) several in which death has resulted within four or five hours from the first onset of symptoms. Death most frequently occurs within five days. If the patient survives for six days, the prognosis becomes on the whole favourable, being distinctly favourable after the eighth day is passed. Where death occurs late, or in the second or third week, it would seem that secondary septic infection is mainly responsible. Suppuration of the buboes, which many hold to be a favourable sign, does not by any means indicate secondary infection—for the Plague bacillus itself can induce true pus production.

TREATMENT:

No specific treatment by drugs has as yet been discovered. Digitalis and cardiac tonics have not been found to effect any definite improvement; nor again the surgical removal of the primary bubo. Already when this becomes noticeable the bacilli are abundant in the surrounding œdematous and hæmorrhagic infiltration. The seat of infection is so often

unrecognizable and when present is so indefinite that little in the way of cure is to be expected from excision.

In this last epidemic as in those of centuries ago, the physician has found himself wholly at a loss to influence the disease by means of drugs of any order; at most an attempt can be made to mitigate individual symptoms. One exception must, however, be made to this sweeping statement; the researches and observations of Yersin have undoubtedly shown that in a certain number of early cases—in which the treatment has been begun at an early stage—the injection of plague serum is effectual. This serum is obtained by accustoming a horse to stand larger and larger doses of the toxines of the Plague bacillus and eventually of the most virulent bacilli themselves. But no small difficulties stand in the way of successful treatment by this method. In the first place, the process of successive injections of horses takes a very long period; in the second place, it would seem clearly that individual horses vary greatly in the amount of antitoxic substances which they develop in their serum and to these two causes we must largely trace the ill success that followed the use of the serum sent from the Pasteur Institute, Paris, to Bombay. In the third place, the amount of serum obtainable from an individual horse is limited and as a consequence the serum is costly and difficult to obtain in any large quantity. In the fourth place, as already hinted here, as is true also in connection with the diphtheria serum or antitoxine, success or ill-success depends very largely upon how soon after the supervention of symptoms the treatment can be applied. In Plague, the infection becomes so rapidly generalized throughout the system, that in severe cases, however soon the treatment may be commenced the infection of the body in general is already so intense and the amount of toxines produced so extreme that, whether the antitoxines directly neutralize the toxines or whether they serve as stimulants, stimulating the tissues to react against these toxines, no amount of serum is adequate to arrest the progress of the disease. However, it must be remembered that we are only at the beginning of serum therapy and it may still be that within the next few years great advances will be achieved. So far, it is true, it is only along these lines that at the present moment we recognize any possible means of influencing the course of the disease.

PREVENTIVE MEASURES:

It is not necessary here to lay down the duties of the quarantine service and to point out the means whereby the disease can be hindered from entering the country. But a few words may be said concerning those points in which the Plague possesses characters of its own demanding for it special treatment. In the first place, it is a peculiarly contagious disease; its spread is rarely by the water or again by the

air, whereby I mean to indicate that the bacilli exposed to the air and sunlight are very rapidly destroyed, and as a matter of fact it is only those in the very immediate neighbourhood of patients, those brought into contact with them or with diseased animals (rats, mice, cats), or again with the soiled linen of patients—who are likely to contract the disease. Thus is it that at the beginning of an epidemic the spread is characteristically from one member of a household to another and from one household to another according to the intercourse between the households. It was found in India that if an infected house be left untenanted for twenty days with windows and doors open, that in itself was sufficient to permit families to reoccupy it with complete immunity.

These facts would seem to have been recognized and acted upon centuries ago, for in what are the first serious general enactments against the Plague, the orders of the Privy Council promulgated in 1605 and brought into force rigorously in 1665, searchers were appointed to detect cases of Plague by house to house visitation; infected houses were marked and guarded, their inhabitants isolated under compulsion and prevented from leaving within a period of six weeks—a "true quarantine." In short the "Leicester System" was here for the first time introduced, and Defoe devotes many pages to show how impossible it was. Such isolation is only possible when an epidemic has been detected at its very onset and the affected households are very few in number, and even then can only be enforced when the population is awake to its importance.

What then is to be done? If as already stated the disease be immediately detected, the sick must as immediately be separated from the apparently healthy members, for once it enters a household, surely and not too slowly the tendency is for the members to be affected. But also those of the household who are apparently healthy must be segregated, and inoculated with Haffkine's vaccine, the house disinfected and kept empty for three weeks or more. Segregation was easy of accomplishment in India. There, thanks to the warm climate, whole villages, nay, whole towns, could be turned out of doors into temporary tents and huts. Here, and in European countries, such segregation would present almost insuperable difficulties, while, as Hankin has pointed out to me, it is by no means certain that we could so surely disinfect our many storied and solidly built houses with the same thoroughness with which they disinfected the one or two-roomed hovels in the East with their solid floors and absence of crannies. It comes to this, therefore, that as in the case of small-pox, vaccination so soon as the Plague is heralded in a community, is a sounder hygienic measure than is segregation.

PREVENTIVE INOCULATION :

We owe to Haffkine the discovery as well as the employment upon a very large scale, of the method of vaccination against this disease. Previous experience has shown that preventive inoculation may be produced either by the setting up of a mild form of the disease, or again by introducing dead microbes in their culture media into the system, when the organism reacts against the products of the bacteria which gradually diffuse out of them in the same way as it reacts against the products that are produced when yet they are alive; lastly, one may employ the products which by chemical methods have been separated from the bodies of the bacteria and from the culture fluids in which they have grown.

In connection with cholera, Haffkine found that he could employ the actually living bacteria which, inoculated under the skin, lead only to local effects but confer a general immunity. In connection with Plague this cannot be done with safety, hence he was obliged to employ a method which has not such lasting effect or results, but which nevertheless, is effective—that of inoculating the dead bacilli—and he used the dead bacilli plus the broth in which they had grown rather than this broth alone free from the dead bacilli, because it has been found that the toxic substances formed by this germ only diffuse out very slowly and as these are difficult to separate from the bodies, this inoculation of the bacilli themselves seems to be the simpler process and one likely to yield results most nearly corresponding to those brought about in the actual disease.

Balfour Stewart has recently pointed out that the fluid of growth contains substances which to some extent neutralize the toxines contained in the bacilli themselves, thus indicating a sound reason for Haffkine's procedure, the reaction not being so severe when this fluid is injected along with the bodies of the bacilli, while the immunizing effects are equally potent.

It is unnecessary here to enter into the exact method employed by Haffkine in preparing his fluid, nor again does time or space permit that we should give here a detailed account of the methods employed by Haffkine to test the value of that fluid. We have referred to this previously in this Journal; suffice to say that the latter methods were so complete that in some cases Haffkine was able to inoculate half the population of a village, leaving the other half uninoculated. In every case, except that of the Bulsar inoculation, the treatment has had a considerable effect in warding off plague attacks from the inoculated and in every case, without exception, it has rendered attacks among the inoculated less fatal than the attacks among the uninoculated. Thus comparing 20,225 uninoculated inhabitants of Plague stricken districts

with 22,967 who had been inoculated, the number of Plague deaths among the former was 980, among the latter 118, or, the percentage of death was 4.8 uninoculated and 0.5 inoculated. In other words, the uninoculated had a mortality nine times greater than the inoculated.

As pointed out by the Indian Plague Commission, Haffkine's system cannot as yet be regarded as complete, nevertheless this Commission (which throughout its report assumes a curiously hostile tone) can only conclude that the inoculation sensibly diminishes the incidence to Plague attacks and Plague deaths; that it confers protection which certainly lasts for some considerable number of weeks, possibly for a number of months. They point out that it is generally recognized that within the first week or first few days after the inoculation has been performed, it does not appear to confer any great degree of protection and that yet better results will be obtained when an accurate method of standardizing the fluid has been devised. It may, indeed, be said that not only is inoculation not protective during the first week or so after the operation, but actually there may be increased danger, provided that the individual is already infected, for inoculation definitely adds to the amount of toxic substances circulating in the system. But this is only what has long been recognized in connection with vaccination against small-pox. It is evident that a certain amount of time is necessary for the reaction on the part of the tissues to develop itself and for immunity to be produced, but this fact is no argument against the anti-Plague inoculation during periods when Plague is epidemic any more than it is an argument against vaccinating when there is a threatened epidemic of small-pox in a community.

With regard to standardizing the fluid, Lustig and Galeotti have developed a method which seems as though it may give much more constant results, though possibly the extent of immunity conferred by it may not be so prolonged as by means of Haffkine's original fluid. Employing Buchner's method they treat cultures of the bacilli with caustic potash and thus dissolve out the bacteria and obtain eventually their nucleo-proteids. The substance thus gained is extremely toxic for several animals when employed in any quantity. It can be dried and kept for considerable periods, can be dissolved in a solution of carbonate of soda and injected under the skin. By inoculation of small quantities of this, they were able at Bombay to immunize rats, guinea pigs, rabbits and monkeys. They found further that the immunizing substance was innocuous in the case of man, no troubles of any kind arising from the come contaminated. The exact dose can easily be determined and used without difficulty which is not the case with Haffkine's liquid. Thus we await with considerable interest to see the effect of these nucleo-proteids when applied to those in a Plague district.

CLINICAL LECTURE ON GALL-STONE SURGERY DELIVERED AT THE MONTREAL GENERAL HOSPITAL.

BY

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Gentlemen: This woman was transferred from the medical side complaining of "pain in the right side" and "swelling of the stomach." The history of the present illness began in April last, when she first felt a sharp, shooting pain in the right side just below the margin of the ribs. The pain gradually became more severe and there was shortly afterwards noticed a swelling in the situation of the pain. She says that her family physician succeeded in relieving the pain and that the swelling gradually subsided and disappeared. About the first of October, however, the pain and swelling both returned, and persisted until her admission to this hospital, in Ward A. under the care of Dr. Finley, on the 3rd of January, 1900. She was transferred to the surgical side on the 13th January, 1900. We found, on examination, a well defined tumour about the size of a goose egg, occupying the space immediately below the liver and extending laterally from a point a little to the right of the median line nearly to the nipple line. It can be distinctly felt, moves upwards during inspiration, and yields a flat note on percussion. Below, it extends down nearly to the level of the umbilicus. The liver is not enlarged; the spleen is not palpable. The patient is a well nourished woman, 35 years of age; she is married, and has had three children; she says that she has never been jaundiced. Her temperature and pulse are normal; urine normal. On the 16th January I removed 28 gall-stones from the gall-bladder; they are contained in this bottle which I pass around for your inspection.

This other woman, 46 years of age, was also transferred from the medical side. Dr. Finley's diagnosis was tuberculosis of the serous membranes, with probably also a condition of cholelithiasis. She has had a considerable serous effusion in the left pleura with displacement of the lung and heart, and some considerable ascites as well. In addition to the symptoms of tuberculosis of the serous membranes, she has for some months suffered from pain in the region of the gall-bladder. Before operation, a large, ovoid swelling could be felt below the ribs on the right side. This mass moved up and down with the liver during respiration. Neither of these patients have ever had jaundice. I operated on this

woman on the 15th January last. On making a vertical incision over the tumour mass, I at once came upon a largely distended gall-bladder. After drawing off several ounces of perfectly clear fluid, I enlarged the opening in the gall-bladder, and found this large stone lying partly in the gall-bladder and partly in the cystic duct. It measured 4½ inches around in one direction, and 2⅞ inches around in the other direction. By careful manipulation I succeeded in pushing it forward out of the cystic duct into the gall-bladder, and removed it entire. The gall-bladder opening was then stitched to the edges of the peritoneum in the abdominal incision and a rubber drainage tube inserted for a few days.

This bottle, which I now pass around, contains 41 gall-stones removed from the gall-bladder of a man, aged 75, a private patient. These patients have all made an uninterrupted recovery.

Although the history of cholelithiasis dates back to at least the year 1618, when Johann Fabricius removed a stone from the gall-bladder, yet the modern surgical treatment was only perfected in 1878 by Marion Simms. In the same year Kocher published a case of cholecystotomy. The surgical treatment of gall-stones was still further brought before the notice of English surgeons by that genius, the late Mr. Lawson Tait, of Birmingham.

At the present time, the treatment of cholelithiasis is surgical. I am not aware of any drug that can materially influence the formation or solution of gall-stones, although many people suffer at intervals for years from gall-stone colic and sometimes pass stones which are found in the stools, the symptoms finally ceasing to occur. Gall-stones are exceedingly common, having been found in Strasburg in one out of every ten autopsies. They are said to be five times as frequent in women as in men. This is probably due to repeated pregnancies, to tight lacing, and to floating kidneys.

The cause is, first, slowing or complete arrest of the flow of bile and, secondly, infection. The infection is of the bile passages and gall-bladder by the colon bacillus, the typhoid bacillus, streptococci or staphylococci. The first result is a catarrhal or purulent angeiocholitis and cholecystitis. The epithelial cells of the bile passages and gall-bladder are decomposed and cholesterine set free.

Gall stone formation, however, it must be remembered, does not always follow the infection of the bile passages. In some instances, particularly if the microbic infection be virulent, it may result in a severe angeiocholitis attended by chills, fever, vomiting, pain across the liver, enlargement of the liver, and the formation of pus in the bile passages. This may result in empyæma of the gall-bladder and, sometimes, great thickening of the walls of the gall-bladder and bile ducts. Localized

peritonitis and, possibly, perforation may be sequent in severe cases, resulting from virulent and wide spread infection.

Again, I think I may say that occasionally a gall-stone may be formed without distinct evidence of infection, as for instance, in the second patient from whom I removed the large stone. The fluid contained in the gall-bladder was sterile. This, however, is a fine point to be determined by a careful examination of a large number of similar cases by the pathologist and bacteriologist. But, as a general rule to which there are certainly few if any exceptions, gall-stones are the result of two factors: slowing of the bile flow and infection of the bile passages.

The gall-bladder is sometimes found much distended, containing 20 or 30 ounces of mucus, or mucus and bile mixed. In these cases the walls are thin. We then call it hydrops of the gall-bladder. The mucosa and muscularis are atrophied. In other cases the walls are thickened, contracted and shrunken.

When the gall-bladder is found distended with clear mucus, the cystic duct is generally occluded. In fact, when such a condition is found, it may be safely asserted that a stone completely blocks the lumen of the cystic duct, as was found in the second case. The bile cannot get into the gall-bladder, and the clear fluid is the secretion of its mucous membrane.

We sometimes find a stone or several stones of considerable size in the common or one of the hepatic ducts. Tait reported cases in which he removed stones from the substance of the liver, lying in a dilated duct or in the tissue alongside the duct, which has escaped by ulceration. I have sometimes found the walls of the common duct, immediately surrounding a stone, very much thinned. Another common situation for a stone is in the dilated duodenal end of the common duct in the ampulla of Vater. In these cases the stone would seem to become engaged in the duodenal orifice of the duct, occasionally giving rise to pain and recurring jaundice, and then dropping back into the ampulla. While it is engaged in the opening of the duct into the duodenum the bile cannot escape; hence the icterus.

In many cases of cholelithiasis the liver is found enlarged. Whether this enlargement is ever the result of the presence of the stones in the bile passages is perhaps a debatable point. Certain it is, however, that a lacing lobe and an angeiocholitis with enlargement, are active predisposing causes of cholelithiasis.

The presence of stones in the bile passages is in a certain number of cases followed by developments of a most serious, and sometimes of a disastrous nature. Among these complications may be mentioned, adhesive inflammation between the liver, gall-bladder and gall ducts, on

the one hand, with the omentum, stomach, duodenum, and transverse colon. The development of this adhesive inflammation is generally indicated by the occurrence of fever, chills, pain, and the development of sepsis or intestinal obstruction. Indeed, it is those complications which not infrequently lead the patient to consult a surgeon.

Another very serious complication of gall-stones is perforation. If this occurs after adhesion has taken place between the gall-bladder and adjacent hollow viscera, the bile and the stone may escape into the stomach, the duodenum, or the colon ; and this occurrence is sometimes followed by a cure. Again, the gall-stone may escape from the bladder or common duct, and be then retained by adhesions. Here an abscess may form around the stone, and a communication be established with some hollow organ. In one instance, I found several stones in an abscess cavity communicating above with the gall-bladder and below with the transverse colon. Not always, unfortunately, does nature proceed in this conservative way. It sometimes happens that perforation occurs before limiting adhesions have formed, and infection of the general peritoneal cavity results. Courvoisier states that in about one-fourth of the cases, perforation takes place into the abdomen with general infection of that cavity. Quite recently I saw such a case. The patient had suffered for years from recurrent attacks of hepatic colic. When I saw her, the abdomen was enormously distended and tympanitic. She was livid, pulseless, with cold extremities, and almost complete supression of urine. She was in fact moribund from general septic peritonitis. The attack came on as one of her usual attacks of hepatic colic. Her family physician had attended her during several similar attacks and the peritonitis had developed very rapidly. Of course nothing could be done for her surgically in her then collapsed condition, and the end came about twenty minutes later.

This large stone, which I now pass round for your inspection, has an interesting history. I removed it from a lady whom I had attended for several years. About six months before operation she felt pain in her abdomen, and she herself diagnosed appendicitis. This she told me afterwards. Thinking that if she sent for me I would at once propose operation, she decided to try a physician and to be treated medically. To attain her object with still greater certainty she sent for what is called an "irregular," who treated her with some nice little sugar pills. Her recovery, however, was not very satisfactory, and more or less abdominal pain continued during the summer. When at last I was asked to see her, I found her very seriously ill. She had been vomiting almost continuously for thirty-six hours. At the time of my first visit the vomiting was distinctly fæcal. She told me that she had taken several

purgatives and an enema, but that nothing had passed her bowels for forty-eight hours. The abdomen was considerably distended, generally tympanitic, and tender under pressure. Her temperature was about 101° F., pulse weak and rapid, the face pinched and anxious looking. There was evidently present an intestinal obstruction and, from the history given of appendicitis, I thought probably I had to deal with obstruction by a band. On making an incision in the median line distended and collapsed small intestines were at once seen. I followed up the collapsed bowel to about the middle of the ileum, when I came upon this stone lying in the gut and completely occluding its lumen. I removed it, and the patient made a most satisfactory and complete recovery. The stone is much larger than is usually found, its circumference in one direction being $3\frac{3}{8}$ inches and in the other $3\frac{3}{4}$ inches. The appendix was found quite normal, presenting no evidence whatever of ever having been inflamed. This stone, of course, did not enter the intestines through the common duct. An adhesive inflammation occurred between the gall-bladder and the duodenum, and the stone passed through into the gut as the result of an ulcerative process breaking down the adherent gall-bladder intestinal wall.

As regards the size and number of stones, if you recall the operations that you have seen and examine the collections of gall-stones in the museum, you will find that, as a rule, there are a number of small stones, —the number in a given case sometimes running up into the hundreds and thousands,—or, if the stones are large, there are seldom more than two or three. One rarely finds a large stone associated in the same patient with a large number of small ones.

Gall-stones are sometimes found in association with malignant disease in the neighbourhood of the bile passages. What their relation etiologically to the cancer is, has not yet been definitely determined, but many surgeons think that in some way they prodispose to a local malignant growth, and that this is an additional reason for removing them. This is my own view.

The symptoms of gall-stones are not all uniform. In a great number of cases there are no symptoms at all. And when symptoms do develop they are not at all uniformly those of hepatic colic. Patients often complain of stomach distress and fullness, discomfort after eating, and loss of appetite. When attacks of severe pain in the epigastric or right hypochrondriac region recur at intervals, accompanied by vomiting and tenderness over the region of the gall-bladder, the nature of the trouble begins to be apparent. If, added to these symptoms one can feel a rounded tumour mass in the right hypochrondrium, and which moves with the liver during respiration, the diagnosis becomes pretty clear.

If the attacks are followed by jaundice, then one can feel almost positive that the symptoms are due to gall-stones. The diagnosis of gall-stones without jaundice is always more difficult.

The differential diagnosis must be made between gall-stones and certain conditions of the stomach, particularly ulcer, movable kidney, appendicitis, and echinococcus cyst. Mistakes in diagnosis are most frequently the result of imperfect and careless examination of the patient. Gastric ulcer is more common in pale, anæmic girls, and at an age when gall-stones are rare. Moreover, the symptoms of gastric ulcer usually bear a more direct relation to the taking of food than do the symptoms resulting from cholelithiasis. The point of maximum tenderness in gastric ulcer is not, as a rule, outside the border of the rectus, but more central.

Movable kidney can be palpated. In examining for movable kidney, the patient should always be examined in the erect as well as in the recumbent position. Movable kidney is well over to the right, and can be made to disappear behind the ribs. A distended gall-bladder can never be made to pass away up in the loin out of reach. Again, in cases of movable kidney, there are often present alterations in the urine and vesical tenesmus.

Appendicitis generally gives a clinical history quite different from gall-stones. The point of greatest tenderness is lower and recovery more slow and prolonged. The occurrence of jaundice would not be expected in appendicitis.

It is sometimes very difficult to decide in elderly patients whether one has to deal with cholelithiasis or malignant disease of the pylorus or in the neighbourhood of the bile passages. But this I can say, that there may be very considerable loss of weight from gall-stones and jaundice, even when there is no very severe pain. Too much importance should not be attached to the fact that the patient is losing weight. This was very strongly impressed upon me a few years ago. An elderly woman was admitted to ward K, complaining of weakness and loss of weight. She was somewhat jaundiced, but not at all deeply so. She did not complain of any pain. There was an indistinct feeling of a mass in the neighbourhood of the pylorus, but I could not make it out definitely. In the region of the gall-bladder there was a little tenderness on very deep pressure, but nothing more. Her only complaint was that she "was so weak and all wasting away." I decided in my own mind that I had to deal with malignant disease, and that the physical condition of the patient did not warrant an operation. Some of my colleagues, however, urged an exploratory incision and this I undertook, not without some misgiving, and a feeling that the woman would not be

benefited. I found on opening the abdomen no sign whatever of cancer, but, from a small contracted gall-bladder, I removed 648 small gall-stones and the woman got quite well and was in perfect health three years later. This case and many others have taught me that, in cases of doubt, to make an exploratory incision is sometimes an imperative duty to the patient.

In regard to echinococcus cyst I have very little experience. It is a rare condition in Montreal, although quite common, I believe, among the Icelanders in Winnipeg. Here, again, if in doubt, an exploratory incision should be made.

Having, after a most minute and careful examination of the patient and thoughtful consideration of the subjective and objective symptoms, decided that the case is one of cholelithiasis; what is the prognosis and treatment?

As to the prognosis, I have outlined it pretty well in giving the natural history of the disease. In many cases, after a certain time, the stones are either passed in the stools or they in some way become quiescent and cease to trouble. If they continue to recur, some means of ridding the patient of such a painful disease, and one moreover so liable to most serious complications, should be considered.

I am not aware of any drug that can be relied upon to accomplish this. The soda salts may be given a fair trial. I do not know that the phosphate, which has been held in high esteem, is more efficient than the carbonate. The surgical treatment of gall-stones is safe and satisfactory. There are very few recurrences. If the symptoms continue, after a reasonable trial has been given to dietry, the removal of tight bands around the body—generally tight corsets—and the administration of soda, you can confidently advise operative interference. The mortality is very small and the danger less than the possible results from delay. As to the technique of the operation, I have dwelt upon it very fully when operating and need not repeat it now.

GONORRHŒA IN THE FEMALE.*

BY

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Gonnorrhœa in woman, as in man, may affect only a part or the whole of the genito-urinary tract. Invasion to this latter extent is certainly exceedingly rare. Certain parts are much more liable to be affected than others. This is partly due to the greater liability to infecting contact of some parts of the tract than others, but it is also, and perhaps mainly, due to the relatively greater vulnerability of some parts than others. The urethra, cervical canal, and fundus of the vagina are much more liable to suffer than the vulva and other parts of the vagina. It is a fact beyond dispute, that those portions of the tract invested by cylindrical epithelium suffer much more than those covered by the pavement variety. Cystitis is not a common result of extension, still less so are ureteritis and renal pyelitis. But instrumentation of the bladder, as by the catheter, may easily convey the infection to the bladder, and thence to the ureters and pelvis of the kidney.

After Neisser, the discoverer of the infective agent, the gonococcus, we owe to Bumm, of Basel, more than to any other worker, the best original work on gonorrhœa in woman. The bacteriology of this disease is especially difficult to study because of the limited culture media on which it can be gotten to grow. The gonococcus is certainly often difficult to find in cases in which, from the history and clinical characters, there can be no reasonable doubt of the existence of the disease. This fact is especially true of the subacute and chronic type of case. It is, however, no doubt true, as asserted by Neisser and Bumm,—and Professor John G. Clark, of Philadelphia, agrees with them—that in every case repeated careful search will always be rewarded with success.

That a man with acute or subacute gonorrhœa will certainly infect a woman with whom he has intercourse, will be denied by no one. That a man suffering from the so-called gleet is dangerous, appears to be by no means so generally admitted. The late Dr. Nœggerath, at that time of New York, read a paper on latent gonorrhœa before the first annual meeting in 1876 of the American Gynæcological Association. He had previously, in 1872, published a monograph on the same subject in the German language. In this paper he announced his belief, based on

* Being part of a Discussion on Gonorrhœa at the Montreal Medico-Chirurgical Society, Jan. 5, 1900.

careful observation, that a man, who has once had a gonorrhœa, is rarely if ever so completely cured that he may safely marry. At the American Gynæcological Association, Dr. Nœggerath's views were received by most of his hearers with a howl of derision. But it set the more careful and thoughtful to observing and thinking, and the result is that now, the doctrines inculcated in that paper are to a very great extent accepted. There is much reason to fear that by some surgeons, and especially by a large proportion of the general profession who treat gonorrhœa in men and advise them on the question of marriage, the vital truth is not realized, that a man with even the minutest trace of gleet may infect his newly married wife with gonorrhœa. And what is the result? Hundreds of innocent young wives are infected by a loathsome and painful disease, from which, it is true, many recover, but by which, also, many others are made invalids, more or less, for the rest of their lives. Those who recover symptomatically are often rendered sterile, or if pregnancy occur, it is the dangerous tubal pregnancy or if uterine it ends in abortion. Still others lose their lives or are only saved from death by a mutilating, unsexing operation.

It is important to bear in mind that the disease can be conveyed in other ways than by the sexual act. Such are infected towels, vaginal douche pipes and other instruments, and the unclean fingers of the medical man. Children sleeping with infected nurses have often acquired the disease. As is the case with all infective agents, the personal equation affects the degree of vulnerability, some being much more vulnerable than others. Complete immunity is probably never acquired by either sex.

Pathology.—Bumm's researches on the pathological anatomy of gonorrhœa have much practical importance. He insists on the fact, that in no part of the genital tract do the gonococci penetrate beneath the epithelial layer. Others, however, in isolated cases claim to have found the organisms in the muscularis. While in the vagina, uterus, and Fallopian tubes we may find infiltration and other evidences of inflammation, the minute structure of such parts shows, for the most part, only a rich round-celled and leucocytic infiltration. When once deposited on the surface of the membrane, the growth of the gonococcus is exceedingly rapid and luxuriant. Then, immediately, an acute, rapid transmigration of leucocytes takes place, causing swelling and the purulent discharge. In the female of an age at which exposure to infection ordinarily occurs, those parts of the tract invested by cylindrical epithelium, as previously stated, are much the most vulnerable. In them the skin-like condition of the vagina enables it to resist, but it is otherwise in the child and senile woman. In these the vulva, vagina, and vaginal surface of the cervix, easily suffer.

When the Bartholin glands suffer, Bumm asserts that it is the efferent duct alone that usually is affected, and Judassohn, another observer, believes that this is due to the germicidal action of the secretion of the glands. The efferent ducts often become occluded, and then the gland becomes a retention cyst, and when this is evacuated by incision, the gland recovers. In such cases the acini of the gland are merely compressed. When a true abscess forms, this has been proved to be due to pyogenic infection. In the uterus and Fallopian tubes, as in the vagina, the gonococci confine themselves to the epithelial layer. They do not even deeply involve the glands. The changes found in the walls of the uterus and tubes are due to round-celled infiltration and transmigration of leucocytes. The extension of the disease to the ovaries, as is well-known to every gynæcologist, is exceedingly common. The discharge escaping from the abdominal end of the tube infects the ovary, and sets up localized peritonitis with the formation of adhesions, which envelop or encapsulate the end of the tube and ovary, and, as a result, we have the well-known pyosalpinx. An abscess in the ovary is due to the infection of the Graafian follicles or corpus luteum. Under these circumstances one often finds one or more collections of pus in the ovary, possibly compressing the structure, but apparently not much otherwise altering the organ.

There is very little evidence to show that the gonococcus can long live on the peritoneum. Bumm believes that it cannot set up general peritonitis. In a very large experience of the gonorrhœal affections of the uterine appendages requiring operation, I have certainly never met with a case. In this connection the experiments of Maslovsky on rabbits, guinea pigs, and mice, are interesting. The results seem to prove his contention that suppuration of the tubes and ovaries in gonorrhœa is due, not to the gonococcus, but to its toxines. It is certainly very rare that the gonococcus or any other organism can be found in the pus of gonorrhœal pyosalpinx or ovarian abscess, after the acute stage is some time past. Maslovsky's papers have appeared in recent numbers of the *Annales de Gynœcologie et d'Obstetrique.*

On the question of the incubation period, Bumm's experiments with inoculations of pure culture of gonococcus are interesting and somewhat at variance with ordinarily observed, clinical facts. He found that inoculation of a pure culture on the genital tract resulted in evidences in twelve hours, and well marked symptoms in twenty-four to thirty-six hours, whereas, from five to seven days usually elapse after ordinary exposure before the symptoms develop.

Symptoms.—To enter fully into a description of the symptoms of gonorrhœa in a discussion such as this, would be manifestly improper. The

pelvic aching, scalding of the genitals, and profuse, fœtid, purulent discharge, are strongly suspicious; and the discovery of the biscuit-shaped gonococcus completes the diagnosis. It is in its chronic form, so very common, and there are many cases in which no history or description by the patient of an acute stage is to be had, that one must be on the look-out for certain very characteristic features of this stage of the disease. The patient, being instructed to retain her urine, is placed on the examining table and the parts exposed in a good light. The vulva generally is often apparently healthy. The urethra must be carefully examined. If discharge have not been washed away by the stream of urine, we will usually find it in evidence. The orifice will be swollen, red, and pouting especially in the floor of the canal. Pressure by a finger in the vagina on the urethra from within outwards, will reveal the discharge if it cannot be had without. Besides a discharge from the canal generally, which in very chronic cases may be entirely absent, a discharge will become apparent escaping from the Skene's tubules. Then the Bartholin glands and their ducts must be compressed, when from the middle or neighbourhood of the red patch, which surrounds or lies near the orifice of the gland duct, pus will often be found to exude. In such discharge the gonococci can usually be found, although perhaps only after repeated examination. The vagina must next be inspected. It may be found to be generally reddened and bathed with pus, possibly, however, only at the fundus or in the form of red points on the ridges of the rugæ. The vagina, however, will often appear to be quite healthy, while the more vulnerable mucosa of the cervical canal with its cylindrical epithelial investment is found affected. The busy gynæcologist or general practitioner cannot always be looking for the gonococcus. I believe it to be a good working, clinical rule to accept as very fairly certain evidence of chronic gonorrhœa, a persistent, purulent discharge from the Skene's tubules, Bartholin gland ducts, and the cervical canal. To search for the Neisser coccus a good microscope stand with Abbe condenser and a twelfth oil immersion objective are necessary. I append Professor J. G. Clark's instructions in his own words :—"For clinical purposes methylene-blue solution is a practical and easily manipulated staining fluid. The secretion may be spread out on a cover glass or on a slide, the latter being usually the better. If it is very small in amount or rather thick and viscid, it may be diluted slightly with a drop of normal salt solution. After spreading it evenly, it is dried by passing it a few times over the flame of an alcohol lamp or gas burner. Methylene-blue solution is then dropped upon the slide and allowed to remain for one-half to one minute, and is then carefully washed off in running water and dried with a bibulous paper or with a clean white

handkerchief. It is not necessary to protect the stained area with a cover glass for it may be inspected directly with a high power or (which is always preferable) with a one-twelfth oil immersion lens.

To be certain of the diagnosis the gonococci must be found inside of the pus cells. While the presence of buscuit-shaped cocci in pairs free in the secretion without the association of other bacteria, is very significant, it is nevertheless, unsafe to make a positive diagnosis. One should never be content with one search, for the gonococci may be found in a certain number of cases only after a repeated examination. In one instance, which I recall, at least twelve negative examinations were made on different days before the gonococci were at last found ; in this case the history and symptoms so strongly pointed to gonorrhœa, that the examination was not abandoned until we were rewarded by finding a very large number of intracellular organisms." As to the value of this method of establishing the diagnosis, I fully concur with the opinion of Dr. Clark, when he says, that "there has been considerable dispute, but there is now a general consensus of opinion as to its value. In some instances in which I have been unable to find the gonococci, even after repeated examination, the symptoms have been so characteristic that I have felt justified in making a tentative diagnosis of gonorrhœa, under the assumption that the micro-organisms were concealed."

When the uterine body is involved, the organ is somewhat bulkier, firmer, and tenderer than normal, and it gives out a thin purulent discharge. Invasion of the tubes and ovaries, besides by the symptoms of pelvic inflammation, is revealed by tenderness and increased resistance of structures in the region of the appendages, and in a short time, by more or less well-defined masses.

Prognosis. There is, perhaps, the danger that the gynæcologist may overestimate the gravity of this disease, inasmuch as the worst cases are those he is most likely to see if he operates extensively. There can be no doubt that a percentage of cases recovers perfectly, in the sense that not only symptoms and physical signs disappear, but the great function of successful pregnancy is restored. A successful full term pregnancy is, however, not to a certainty followed by a normal labour and puerperium, for a latent gonorrhœal infection may be roused to activity or a mixed infection be set up.

Incomplete recovery is exceedingly common in the case of involvement of the appendages, and in many instances more or less complete invalidism is ended only by an operation for their removal. I have already alluded to the very chronic course of the disease in the urethra, especially the Skenes' tubules, the Bartholin glands, and the cervix. In this stage and in these situations, though attended by almost no symptoms, it can undoubtedly be communicated.

Treatment. In this part of the discussion I prefer to be suggestive rather than to fully describe. Concerning the treatment of the acute stage, there is the widest difference of opinion between such authorities as Bumm of Basel, Behrens of Berlin, and Neisser, than whom there are no authorities deserving of more respect. Bumm and Behrens are opposed to all local treatment as by douches, etc., because of the risk of carrying the disease from the vulva and urethra to the upper parts of the genital tract. Neisser, on the other hand, urges the prompt, energetic and persistent use of germicides. In this, as in so many other instances of radical differences of opinion between high authorities, a midway course of action is probably the safest.

In the acute stage the patient must be put to bed and kept there. The diet should be unstimulating, the bowels regulated by saline purgatives, and warm hip baths and frequent soothing irrigation of the genitals be employed. The use of linseed tea by irrigation and douche is very grateful to the patient. The acute stage having passed, germicidal douches of permanganate of potash 1—5000, bichloride of mercury, 1—5000 to 1—2000 or formaldehyde, 1—4000 to 1—2000, each well tried and reliable, may be employed. The toxic sublimate must be cautiously used. For the best results the vaginal douche must be taken or administered in the dorsal position on the bed pan. If the patient lie still for a time afterwards there is, in the condition of the parts in many women a tendency for a pool of the poisonous solution to remain in the vagina from which it may be absorbed. The sublimate douche should therefore be followed by a small quantity of warm water. But the vaginal douche must be considered as merely accessory to the careful, thorough application to the whole of the affected surfaces of what I consider the most effectual of all remedial agents, silver nitrate solution in strength of from 20 to 60 grains to the ounce of water. This cannot be done thoroughly in any way other than with the patient in the Sims position, through the Sims speculum. The surface to be thus treated must be wiped clean and dry and the solution thoroughly applied by the swab with pressure, till every part is whitened. If the relatively new and, as they are claimed by their advocates, much less painful protargol and argonin be equally efficacious, they will be valuable acquisitions. They may be used in strength of from 1 to 3 per cent. Simiarly the urethra and especiallv the Skene's tubules, the ducts of the Bartholin glands, and the cervix must be treated by careful topical applications of the same remedies.

The urethra and cervical canal may be best treated by instillation of the solutions, the Skene's tubules and Bartholin glands efferent ducts, I treat with a small, slender nozzled syringe, such as is used by the

ophthalmic surgeon for the treatment of the canaliculi of the nasal duct. For all the accessible areas affected by the disease the use of a 5 to 10 per cent. solution of ichthyol glycerine is advocated by Bumm and endorsed by Clark. This remedy may be used on pledgets of gauze or tampons left *in situ* in the intervals of the applications of the silver salts.

In the treatment of the uterine cavity in all but the most advanced chronic stage, local treatment by curetting, douches, or other must be avoided. In the early stage, instrumentation of the cavity of any kind is very apt to lead to extension to the tubes and ovaries. This is a lesson I have learnt by personal experience and it is in line with the experience of other gynæcologists.

In the management of the gonorrhœal affections of the Fallopian tubes and ovaries those who, like myself, have had experience of these cases before the advent of the modern, all invading extensions of abdominal and pelvic surgery, will, I think, be inclined to counsel time and patience. By long rest in bed, good nursing, and judicious symptomatic treatment, a fair percentage of such cases will get well; so well, as already affirmed, that now and then one may witness a restoration of the highest function of the sex,—a favourable pregnancy and labour. On this point I personally have strong convictions, all the more so because if operation be inevitable the longer the interval since the acute symptoms have subsided the more favourable will be the subsequent course of the case. The fact of the extreme rarity of general peritoneal gonococcus infection, if it ever occur, strongly supports such a course of action.

The reader in search of further information on this subject may be usefully referred to the monograph on gonorrhœa by Bumm in the first volume of Veit's "Handbuch der Gynäkologie," to Professor John G. Clark's "Critical Summary of Recent Literature on Gonorrhœa in Women," in the January and April numbers of the *American Journal of the Medical Sciences* for the current year, both of which I have made use of in the preparation of this paper; and to an article by Ravogli in the *Medical News* for November 18, 1899.

A SIMPLE AND INEXPENSIVE METHOD OF OBTAINING AND PASTEURIZING CREAM FOR THE PREPARATION OF INFANT FOOD.

BY

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The problem of providing a suitable food for infants who have to be fed artificially is one that the family physician has constantly before him ; and although he may have a partial respite during the winter months from his worries and anxieties in this respect, returning spring brings with it the same difficulties each year.

That cows milk modified in such a manner as to render its composition similar to that of mother's milk is the best artificial food, seems to be now generally admitted by the profession, and the plan carried out by the Walker Gordon laboratories is perhaps the best one yet devised. Nevertheless, for many reasons, the application of this method is as yet only possible in large cities and even then among the well-to-do, so that for country people and the middle and poorer classes in cities one must rely upon home modification.

It has always seemed to me that there are two essentials in the use of cows' milk for infants food ; namely, cream of fairly constant strength, and pasteurization. With regard to the latter, I am quite aware that under certain circumstances it can be dispensed with, but these are not the conditions which are met with among the class to which I have referred. In the cities where milk is delivered once a day and where this milk with few exceptions has been drawn from the cows the night before the morning delivery, it is impossible to keep it free from contamination for twenty-four hours without pasteurizing it, except, perhaps, during the coldest months of the year. In the country, on the other hand, although fresh milk can be obtained twice a day, it takes time for the cream to rise and as comparatively few families can afford the luxury of an ice-house, during the hot months there is the same, though not so great, danger of those fermentative changes taking place in the milk which render it indigestible and unsafe.

The necessity for using cream as the basis of the food I will not refer to as it is not my intention to discuss that part of the subject.

Some years ago, having to do with a considerable number of infants requiring artificial food both in private and hospital practice, I devised

the following plan and have found it simple and easy to carry out. I do not claim anything especially original in my methods but merely that they can be easily put into practice by any woman who is willing to devote three-quarters of an hour each day to the preparation of food for her baby and who is able to incur the small expense ($1.00) entailed in procuring the apparatus.

To obtain a cream of fairly definite composition.

In the city where milk is delivered in quart bottles the daily supply should be obtained in this way, and the milkmen make no extra charge for delivering it in bottles. Milk delivered in the city in the morning, except in a few instances in which the dairies are only a few miles from town, is drawn from the cows the night before and put either into quart bottles or into large cans. When the new milk is placed in bottles each bottle will contain about the same amount of cream, some of which will have risen during the night preceding delivery. Where cans are used some of the cream will have risen during transit to the city, and the milkman, in order to ensure that his customers all get their fair proportion of cream, gives his cans a shaking up before measuring out the milk. This, however, is only partially successful in mixing the cream and milk and the first milk poured from each can is much richer in cream than that at the bottom. The bottles, when received, are to be set in a cool place for six or eight hours to allow the cream to rise. In the country, where each family has their own cows, the new milk should be put into quart bottles, "jem jars" will answer the purpose perfectly, and set aside for the cream to rise.

In separating the cream from the milk it is necessary, in order to ensure uniformity, to draw the milk from the bottom of the bottle and allow the cream to slowly settle down without being disturbed as the milk is taken away. This can only be accomplished by means of a siphon and, owing to the impossibility of obtaining a simple and cheap one ready made, I am in the habit of making a siphon myself for each of my patients requiring it. All that is necessary is to bend a piece of glass tubing of the proper size to the shape of a V, and any physician can do this by using the following simple directions:—

To make the Siphon, get a piece of glass tubing 21 inches in length and a quarter of an inch in calibre. This can be obtained from any wholesale druggist and can be ordered cut into lengths of 21 inches, which makes it easy of shipment. German glass I have found less liable to crack and easier to work than American. Should it be necessary to cut the glass, make a small scratch in it with a three-cornered file where the break is wanted, then catch it between the fingers and opposing thumbs of both hands having the thumb nails touching on the side of

the glass just opposite to the scratch, then, on attempting to bend it, it will break off smoothly across, and the sharp edges can be rubbed down with a file. To bend the glass to the V shape, hold it in the flame of an ordinary gas jet, or coal oil lamp with the chimney removed, for a few minutes until it softens sufficiently to allow it to be bent to the required angle. The tube should be warmed gradually at first and then put right into the flame and allowed to become smoked, twirling it slowly in the flame so that it becomes equally heated all around. It is well also to heat in this manner about four inches of the tube in order to get a curve rather than an angle at the bend, as the latter is harder to keep clean. A Bunsen burner or spirit lamp gives too hot a flame and melts the glass. It is convenient to make one arm of the siphon an inch or two longer than the other.

In using the siphon hold it with the angle down, fill it with water, and close the long arm with the tip of the finger. Then, keeping the finger applied to the long end, turn the siphon with the angle up and introduce the short arm into the bottle of milk, letting it rest upon the bottom. On removing the finger, the milk will flow through the tube and continue to do so until the bottle is empty. If, however, the layer of cream is watched, the siphon can be lifted out of the bottle just before the cream reaches it, and thus there is left in the bottle all the cream and a small portion of milk, the latter depending upon the expertness of the person using the siphon.

To pasteurize the cream.

A clear glass bottle with not too large a neck, a chemical thermometer registering up to 212° F. fitted in a perforated cork, which loosely fits the neck of the bottle, in such a manner that the bulb of the thermometer comes within half an inch of the bottom of the bottle, and some absorbent cotton, are all that is required in the way of apparatus. The chemical thermometer can be obtained from any wholesale druggist for 85 cents. The cork can be perforated with a rat-tail file or by burning out the hole with a red hot skewer. The cream is put into the bottle and the cork containing the thermometer inserted; the bottle is then placed in a pot containing a couple of inches of warm water and allowed to heat on the stove. The thermometer is watched until it reaches 160° F., taking care that it does not go above 165° and the pot is then set on the back of the stove where it will cool off very slowly and allowed to remain there for twenty minutes. At the end of this time the bottle is removed from the pot and the cork replaced with a rolled up plug of absorbent cotton. If the cotton should become wet it must be changed for a dry plug. Cream prepared in this way will keep sweet for twenty-four hours at least without needing to

be kept on ice, and all that is necessary in removing a portion from the bottle is to be sure that the cotton plug does not become moist, or, if it should, to replace it with a dry piece at once.

It is not my intention here to say anything about the formulæ for preparing food from cream obtained in this way. Water, or barley water, and sugar can be added in various proportions according to the age of the child. If desired, too, a certain amount of milk can be left in the bottle with the cream. My own practice has been to call at the patient's house and see the bottle containing the milk after the cream has risen and then show the person who undertakes the pasteurization how much is to be left in the bottle when the siphon is used. If this should not agree with the child, the proportion of cream to milk can be altered by allowing less or more to drain away through the siphon, and in this way, although one cannot always estimate exactly the proportionate amount of proteids and fats that the child is getting, one can, by changing the proportions, get a food that agrees with the child.

It will be readily understood that this method of siphoning off the milk can be much more easily comprehended by a practical demonstration, and that, therefore, it is much better to have a siphon and milk bottle in one's office to show how it is done than to describe it, or, better still, to go to the patient's house and perform all the steps for them the first time. The only difficulty I have met with so far has been in having the siphon kept clean and sterile. It can be washed by allowing a stream of cold water to run through it after each time it is used and also by using one of the wire tube brushes that are sold at every shop where feeding bottles are to be had. The wire of the brush requires to be lengthened by adding eighteen inches of brass or copper wire to it in order that it may be drawn through the tube. The siphon can also be boiled occasionally.

ASEPSIS AND ANTISEPSIS IN SURGERY.

BY

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Of the sciences whose number is legion, none have made such wonderful progress and such marvellous strides during the last twenty years as surgery; and if we stop for a moment to consider, or rather to endeavour to ascertain the means by which this remarkable advancement was accomplished, we will find that, of many factors, none has played as important a rôle as the subject of this paper.

The introduction of antiseptic and particularly of aseptic measures into the domain of surgery, from its first establishment by Lister up to the present day, has converted a speculative science into a well-defined certainty, and has assured results after operation, which formerly considered as unexpected, uncertain, and indefinite, have now become most satisfactory and conclusive, and most gratifying in their nature. In fact, the knowledge and proper application of aseptic and antiseptic surgery have revolutionized that noble science, and have given to the nineteenth century a blessing, a protection, and a safeguard, for which humanity at large must feel the greatest pride and must entertain the deepest gratitude.

The surgery of to-day, in the hands of conscientious and competent men, will give positive and definite results in at least 80 per cent. of cases where surigcal intervention is indicated or is justified; while fifty years ago the effect of surgical procedure was negative or, at all events, most disappointing in about 85 per cent. of cases operated on.

The terrors of the surgical practice of those former days, terrors which both surgeon and patient faced meekly and in resigned despair, such as unavoidable suppuration, septicæmia, pyæmia, erysipelas, tetanus, and, notably, hospital gangrene, have now almost completely disappeared and may safely be declared to be becoming extinct. They are now looked upon as the exception rather than the rule, and can always be traced to ascertainable and avoidable conditions. Hence, even suppuration is now considered an unusual occurrence, and the possibility of its occurrence determines, very naturally, the advisability of any operation.

Aseptic operations should be thoroughly safe and should not occasion any undue anxiety or impose any additional degree of responsibility, for, as Gerster very wisely states, "it can now be truthfully and safely

* Read before the Medical Society of Ottawa.

asserted that the surgeon's acts determine the fate of a fresh wound, and that its infection and suppuration are due to his technical faults of omission or commission."

In this short and necessarily incomplete exposition of the subject, I shall endeavous to give a brief outline of the principles of asepsis and antisepsis; how they should be applied and to mention some of their respective advantages and disadvantages.

Asepsis is the technique by which a primarily clean and germ free wound is maintained in its original condition until healing is complete. Antisepsis, on the other hand, is the procedure the object of which is the destruction and elimination of noxious germs that have found lodgment in the human tissues and are damaging them.

The stage of controversy and argument as to the benefits of asepsis and antisepsis, is past, and the surgical world is at one as to the value of these methods. The bacteriological proof that suppuration, erysipelas, and all other similar dangers, arise from pyogenic organisms, is now practically absolute, and the clinical proof is equally strong.

In the aseptic methods, besides the mechanical measures, chemical antiseptics or heat, or both, are used for the purpose of obtaining absolute surgical cleanliness, including in this the patient's person, and particularly the field of operation, the hands of the surgeon and his assistants, all instruments, dressings, etc.; and after this no chemical antiseptic is used, but only such solutions and dressing as have been sterilised and made germ free by heat. In the antiseptic method, the same antiseptics are employed for procuring cleanliness, and, in addition, chemical antiseptic solutions and dressings impregnated with them, during and after the operation. According as they are indicated, either method must be thorough or else it is useless.

In my description of the application of asepsis to surgical work I do not purpose dwelling at length upon the elaborate and varied explanations as given in different works on the subject, for we must never lose sight of the fact that surgeons are not above having marked peculiarities—I might be pardoned for calling them hobbies—but rather to report the methods adopted in my own practice and by my hospital confrères, with whom it has been my good fortune to labour, and also from close observation and study of the methods carried out by my able and worthy friend, Dr. Prevost, whom I assisted for several years in gynæcological surgery, and to whom I am deeply indebted for much valuable information and instruction on this very important department of surgery.

Asepsis must be complete in every detail, or else it is useless and the operator will fail dismally. Every object, article, instrument, or solution which may be employed or applied, or with which the operator

or the assistants or the nurses' hands may come in contact, must be thoroughly sterilised and, moreover, the hands and arms of every person taking part in the operation must be scrupulously aseptic and kept as such until the last dressing is applied. Suitable sterilised costumes or gowns must be worn. In the absence of a perfectly pure or germless atmosphere, plenty of plain sterilised or medicated water must be employed to keep the fields of operation, the hands, etc., as free as possible from any particle of dust or other matter floating in the air and liable to deposit themselves in the region to be operated on.

Foremost among the *means of sterilization and disinfection* stand:—

(1) The homely but thoroughly efficient and sound methods of mechanical purification, consisting of shaving, washing, scraping, maceration and scrubbing, with the aid of soap and plenty of clean warm water. How much can be accomplished in surgery by the use of these simple methods was first demonstrated by the brilliant results of men like Lawson Tait, who placed almost absolute reliance upon ordinary measures of personal and domestic cleanliness. This is certainly the most important preparatory act of all forms of disinfection.

(2) The most valuable of all bactericidal agents, because easily procured, rapidly effectual, and practical, is heat. It can be used in the form of boiling water, steam, or hot air. I do not mention the actual cautery as it properly belongs to the subject of operative technique. Of all agents, boiling water occupies the front place because, taking its bactericidal value into consideration, we know that it will kill spores of anthrax, one of the most resistant forms of bacteria, in two minutes, and will destroy the vegetative forms of any coccus or bacteria in one to five seconds.

Next in importance is steam, which to be fully effective must be pure and saturated. Steam can be used quiescent, moving, under increased pressure, or superheated; but moving steam has been found most useful and will kill anthrax spores in five to ten minutes. Hot air is so inferior to the other forms of heat that it is practically useless and rarely employed.

The value in surgery of the commonly applied chemicals as germicides falls far below that of the above mentioned caloric agents, and very few, even in a concentrated state, will destroy anthrax spores within twenty-four hours. Those commonly employed are: carbolic acid, bichloride of mercury, permanganate of potassium, creolin, formaline, iodoform, boracic acid, salol, hydrogen peroxide and many others.

The external conditions influencing disinfection and sterilization are variable, and under these changing conditions a variation of the process adopted must take place. As a rule, several of the known methods

have to be combined, their application being either simultaneous or successive.

The *methods of sterilization* carried on for the instruments, dressings, ligatures, vessels and dishes, and drainage tube and other accessories, in my operations in the hospital are as follows—and I must state, without wishing to appear presumptuous or arrogating too much praise for the system or the nurses who superintend the work of this department, that they have proved extremely satisfactory and the results have been excellent.

All instruments except the knives are boiled in 1 per cent. solution of carbonate of soda for twenty minutes; the knives for three to five minutes only. The sterilization is done immediately before the operation, when they are placed in dishes containing warm sterilized water. In cases demanding aseptic surgery, as far as this distinction applies, I usually employ plain sterilized gauze only. The process of sterilization of the gauze is as follows:—Strips of gauze one yard long are first boiled for one hour, then taken out and allowed to dry completely. They are then placed in the sterilizer and steamed at 212° F. for two hours and immediately afterwards packed in sterilized jars which are hermetically closed. The gauze is preserved in this manner, and previous to every operation, the quantity is resteamed for one hour and is then ready for immediate use. The pads—sponging pads which are now substituted for ordinary sponges—the towels, and the gowns are sterilized in a similar manner. The agate-ware dishes are placed in boiling water for half an hour and then immersed in a 5 per cent. carbolic acid solution for about one hour. The glass vessels are scrupulously washed with soap, and afterwards put in a similar carbolic acid solution for one hour. The rubber drainage tubes are boiled for twenty minutes and then preserved, ends upwards, in jars filled with 1 to 20, carbolic acid solution. The rubber sheets are disinfected by immersion in carbolic acid or bichloride solution. The water itself is sterilized by boiling for thirty minutes.

If precedence can be given to any one article required in operative surgery, where the demand for the strictest ascepticism is considered, the ligatures are certainly those which must be prepared with the most scrupulous care. The three kinds of ligatures most commonly employed are catgut, silkworm gut and silk ligatures, and their respective methods of sterilization offer differences worth mentioning.

Silkworm gut is sterilized by being kept in boiling water for twenty minutes, and then put in a well-covered jar containing absolute alcohol.

Silk ligatures are boiled in a 5 per cent., carbolic acid solution, for forty-five minutes to one hour, and are then preserved in pure alcohol.

The manner of preparing catgut so as to render it perfectly aseptic,

is rather more complicated and difficult. The smaller-sized catgut undergoes the process with the greater degree of certainty, and as a consequence most surgeons discard the larger sizes in their operations. Dr. Prevost prefers Keller's catgut, No. 00, which is remarkably strong for its size, and when necessary he uses it double. The catgut is first immersed in ether for an indefinite length of time, afterwards soaked in juniper oil (an effective antiseptic) for twenty-four hours, then washed in ether to remove the fats, and, finally, is boiled in absolute alcohol under pressure for a few hours, and then transferred and preserved in sublimated alcohol, 1 to 1000, until required.

There are several modifications to those methods, but these are the ones in vogue at the General Hospital for the preparation and preservation of the various ligatures above mentioned.

Following the brief account of the manner in which the various kinds of material required in operative work are sterilized, I desire to terminate my observations on the subject with a short description of the *modus operandi* from an aseptic point of view in any one operation, say a laparotomy, as performed in the operating room of our hospital.

However reliable his staff of assistants and nurses may be, the surgeon before beginning an operation should see that absolutely everything is ready; not only that the patient has been properly prepared and the field of operation thoroughly washed and scrubbed and disinfected, in the manner about to be described, and covered with sterilized dressings the day before, but that all the instruments, bandages, dressings, and the plain and antiseptic solutions, are at hand; and that everything that can be needed is within reach. The hands and forearms of all connected with the operation, excepting the "dirty" nurse, should be disinfected and sterilized in the following manner:—

The fingernails having been cut close and scraped while dry in every case, the hands and forearms are given a generous and stiff scrubbing with a previously sterilized brush, plenty of sterilized water and ordinary castile soap; this procedure to last about five or six minutes. Johnson's ethereal soap or green soap is next rubbed in for a few minutes, the hands and arms rinsed in sterilized water, alcohol poured over them, and finally bathed in a bichloride solution, 1 to 1000, for a minute or two—a step which I look upon more as a matter of form than a real necessity—and this completes the toilet of the upper extremities for what they are about to do. Some surgeons of the Water Street General Hospital go further and immerse their hands in potassium permanganate and oxalic acid solutions as a more stringent precaution; I do not, and have had no reason to regret it. The latest fad as a completion of the disinfection of the hands and fingers, consists in dipping them in pure carbolic acid followed by immediate immersion in absolute

alcohol. I consider this a very heroic measure and I fear it will take me some time to muster up enough courage to carry it out.

The field of operation which has been previously shaved, scrubbed and aseptically prepared, is put through the same process of sterilization as for the hands and arms, by the first assistant, and covered with a strip of gauze and the field completely surrounded by sterilized towels or sheets. Everything is now in readiness for the operation to begin, providing the patient is properly anæsthetised. During the operation, every detail must be attended to with a thoroughness as minute and definite as if upon it depended the success of the whole operation. Throughout the whole operation, the procedure of all concerned, next to the proper observance and application of the technique of the operation, is to preserve the field, the hands, the sponges, etc., as pure and as sterile as possible. Where the operator has not to deal with an infected wound or one liable to become so from the direct nature of the neoplasm or parts removed, plain sterilized water alone should be employed for both external and internal use, always remembering that any chemical solution introduced into the peritoneal cavity is wont to act as an irritant and is consequently unsafe and even dangerous.

The operation being completed and the incision closed with as much care and as firmly as possible, the wound is mopped, cleansed, and dried, and pads of sterilized gauze applied over it, and a quantity of loose gauze added to this, and the whole covered with a large sterilized pad made of absorbent cotton surrounded with gauze, which is held in place with strips of adhesive plaster and a wide abdominal bandage. The dressing of the wound has been done without the aid of any chemical antiseptic and why? because they are both unsatisfactory and unreliable in what we term an aseptic operation.

If the wound is perfectly aseptic after the operation, the sterilized dressing, properly applied, should keep it so till the healing process is completed by resolution, while the application of antiseptic lotions, powders, or gauzes, will irritate the soft tissues of the wound, as most of them coagulate the albumin contained in human tissues and their discharges, converting them into inert albuminates and annihilating their germicidal properties. They also produce a superficial necrosis of the skin and underlying tissues with which they may have come in contact, and consequently prevent resolution and encourage inflammation.

If at the completion of an operation the wound has not been preserved aseptic or made so, the application of iodoform, aristol, salol, boric acid, etc., will not prevent suppuration ; such at least has been my experience.

Before terminating, I desire to make a passing reference to the agen-

cies by which a septic or infectious process established in the human tissues can be stopped. Here, also, after washing and disinfecting the external parts, we resort to mechanical measures. By mechanical measures we understand:—

(1) Incision, whose prime object is to relieve tension and afterwards to allow the evacuation of the liquid, semiliquid, or solid products of suppuration. Irrigation of the cavity may be employed to aid the first evacuation of abscesses.

In all incisions, or where there is a counter incision, two tubes should if possible be introduced, as they facilitate the influx and outflow of the irrigating fluid; and if one tube only is used, irrigation might be done continuously so as not to cause over distention and rupture of the walls of the abscess cavity.

(2) Drainage of abscess cavities through incisions, whether by means of tubes or gauze packing, is important, and is indicated as the cavity continues to suppurate. The medium of drainage should occupy the most dependent position, and must be placed so as not to be liable to be expelled, and should not impinge on nerves or vessels. Their daily cleansing and revision are imperative. When the discharges become serous and limpid, the cleansing of the cavity is finished and the tubes or gauze should be removed.

While pus is discharging, moist, antiseptic dressings frequently changed are indicated; but as soon as the cavity is cleaned and drainage discontinued, dry dressings should be applied and antiseptic powders dusted over the wound. Chemical antiseptics are here applied because they exert a distinctive effect upon the micro-organisms actively engaged in the production of suppuration and neutralise the activity and intensity of their ptomaines and toxines.

In conclusion, I beg to state that my object in presenting the subject of asepsis and antisepsis in surgery to this meeeting to-night was not to impart a great deal of new information upon a subject with which you are all so well acquainted, but rather to freshen your memories on some of the facts, to call for an expression of opinion, and to elicit discussion, which I am sure will prove more interesting and more instructive than my humble and very imperfect effort.

ON THE ESTIMATION OF DISABILITY AND DISEASE DUE TO INJURY.*

BY

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The literature in regard to the medico-legal aspect of disability and disease resulting from injury is at present almost exclusively German, I know of no work in English which deals with the subject in a general way, though several of those referring to special parts of it are among the most valuable we possess. The reason for the preponderance of German literature in this field lies in the very extensive system of government insurance against industrial accidents, introduced into Germany in 1884 and controlled by the German Imperial Insurance Bureau. This has resulted in the training of a class of medical officials whose unbiased and thoroughly scientific study of the questions involved cannot be placed too high.

The principle of an equitable compensation of labour accidents has been enforced by law in Switzerland (1881), Austria (1887), Italy (1898), Belgium (1894), Norway (1894), Denmark (1898), Finland (1897), England (1898) and France (1898), and will before long probably be adopted by all civilized countries. Russia and Sweden have similar laws already drafted. A bill aiming at this was introduced recently in the Ontario Legislature, but has not yet become law. I understand that similar legislation is contemplated for the Province of Quebec.

The above legislation is in all cases based on the principle that in the case of personal injury received through accident, occurring in connection with occupation and not intentionally caused by the employee or specific negligence on the part of the employer, the loss should be shared between employer and employee under conditions fixed by the government, which also guarantees the payment of such indemnity as may be decided upon, if the employer becomes financially unable to do so. The amount of such indemnity paid by the employer varies from 50 per cent. in England and France to 60 per cent. in Austria, and 66 2-3 per cent. in Germany and Switzerland. The non-compensated part of the loss represents the workman's share. As a rule the loss is equalized by systems of liability insurance or by mutual benefit societies guaranteed by government, the assessment varying with the localities

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and the particular trades insured. Payment by annuity is mostly followed, though in England this may be commuted by a lump sum calculated on a basis of three years full wages.

The limitation of liability does not apply to cases in which specific negligence of the employer is proved, in which case the full amount of damages may be recovered under the common law; but in England the injured person must decide at the outset whether he will accept the partial indemnity or proceed in the courts. A very clear summary of the law on the subject has been recently published by Professor F. P. Walton, (*La Revue Legale, Feb., 1900.*)

As the assumption is that the employer is liable for a certain proportion of the loss in all cases unless exceptional negligence is shown, the legal questions under the government insurance system, are relatively scanty; and the assessment of the amount of disability incurred, which is essentially a medical matter, is the chief problem. The question of what constitutes sufficient ground for assuming a certain medical fact to be proved, is of course a matter of judicial decision. In Germany, Austria and Switzerland, there are over 20,000,000 persons insured under the laws, and the claims from over half a million accidental injuries are annually adjusted by the officials. In Germany, the hospital or home treatment is free during the first three months following an injury, but compensation only begins at the termination of three months.

The conditions under which we have to do with the estimation of disability are :—

(1) Employer's liability.
(2) Accident insurance and benefit societies.
(3) Medico-legal damage claims.
(4) Pensions, etc.

In employer's liability, the nature of the medical work depends largely upon whether special legislation exists concerning responsibility in ordinary cases, or whether the responsibility is left an open matter to be settled by litigation in each case. In the former, the medical study of the case is the chief factor; in the latter, the legal element dominates from the outset, and the medical problems are of secondary importance. In accident insurance, the liability is limited by contract, the amount, rates and compensation being specified, and a proviso made excluding all effects of illness or constitutional conditions, so that the medical aspect of the case is considerably narrowed. Hence, comparatively few accident insurance claims, unless grossly unreasonable, are contested, apart from the fact that from business reasons a reputation for paying claims is generally sought.

In medico-legal damage claims, one of the chief hindrances to rational adjustment is the circumstance that the facts are often only known to

one side and the amount demanded is usually much in excess of fair compensation. It is especially in these cases that trivial proofs of injuries, which are often non-existent, are supported by expert testimony of a kind which has obtained for medico-legal experts as a class a more than doubtful reputation.

The above is mentioned to indicate how one set of conditions, which rarely calls for serious medical consideration under certain circumstances, may form the bulk of medico-legal work in others. The amount of trouble and expense caused to railroad companies, for instance, by cases where the injury is ill defined, non-existent, or exaggerated or misrepresented, far exceeds that caused by definite severe and well authenticated injuries. It must be remembered, however, that the element of prognosis, with all its attendant uncertainty, enters largely into this branch of medico-legal work, whereas the criminal branch of legal medicine deals mainly with what is past.

The closely allied subject of sickness insurance, which has been thoroughly studied in Germany and to which our insurance companies are now beginning to devote attention, presents many points of interest which have not received the scientific study they deserve from the medical officers connected with benefit societies.

In the present article the subject matter is divided as follows :—

(1) Permanent disability from injury.

(2) Temporary disability from injury.

In giving practical instruction on the estimation of disability due to injury in connection with my medico-legal course, I found it impossible to obtain adequate information on the subject from any of our English text-books.* I had, therefore, prepared, in the form of synopses, a concise summary of the statements of the leading German authorities (especially C. Kaufmann and Ch. Thiem) for the use of my students. These are reproduced together with an abstract of some of the comments made about the more important topics.

It has since occurred to me that this might also be of service to physicians concerned in accident insurance work or who have to give evidence about damage cases in court, as well as insurance officials, judges, claims agents and those having to do with pensions of any kind. It is remarkable how little use has been made hitherto of the very convenient continental method of expressing the disability in terms of the percentage loss of earning power, and how little it has been made with us a subject of medical study.

The best known of several tabulations of the loss of earning power in

* The appearance of Pearce Bailey's English translation of E. Soliebiewski's "Hand Atlas of Diseases due to Accident" (W. B. Saunders, Philadelphia,) will materially improve matters.

regard to the leading forms of permanent disability, is that known as the Vienna Schedule, which has served as a basis for most other similar tables. It must be noted that in certain points minor differences exist among the standard authorities, and that the values given are only intended to be approximative and to serve as a point of departure in deciding individual cases. It must be remembered that the Vienna schedule is expressed, so to speak, in terms of unskilled workman. From this relatively simple problem, the variations called for by special forms of occupation can be determined. From the point of view of disability workmen are divided into four classes :—

(1) The unskilled laborer.

(2) The laborer whose work requires skill as well as strength, such as the bricklayer, mason, etc.

(3) The handicraftsman : as carpenter, joiner.

(4) The higher grades of skill, as mechanics.

It will be seen that the same injury might produce different results in each class. For instance, anything which impairs the finer movements of the fingers or wrists would represent a great loss to an engraver, whereas a laborer would be relatively little impeded by a partially anchylosed wrist, which was not painful and permitted of heavy work being done. On the other hand, a sensitive scar of the hand, which would incapacitate the laborer completely, might not interfere at all with the finer movements of the engraver. Accidents lessening the flexibility and free motion of the feet without impairing their firmness as a base of support and rendering them painful give relatively slight impairment to laboring men as compared with that caused in the case of roofers or sailors, etc. Injuries to the lower extremities cause much less inconvenience to those whose work can be done in a sitting posture than to others. Certain callings require unusual acuteness of sight and hearing as compared with others.

The following factors also come into account :—Can the condition be rectified by mechanical appliances if it cannot be improved by treatment ? Is it likely to get better or worse; is it temporary or permanent ? Can the person without difficulty adapt himself to another occupation ? Does the condition, besides incapacitating him from work, cause him an actual increase of expense for nursing, attendance, etc.? Are his chances of securing other employment diminished ? Does he suffer from pain ? Has the injury made him liable to any special disease ? Is the condition in part due to disease existing before the accident, or to some complication set up or predisposed to by it ? Can operative treatment be undertaken ? (The patient is under no obligation to submit himself to any operation which may be dangerous, all involving general anæsthesia coming under this category.) Was the

condition due, not to accident, but to occupation disease? Did it arise from causes unconnected with his work?

Medical men as a class tend to underestimate the injury to laboring men, and especially to reckon too short a time as the limit of disability after injury of the bones or of parts (hands and feet) used in rough work. The date at which a patient can be released from hospital treatment or when medical supervision becomes unnecessary, is often only one-half of the time required to put him in condition to renew his work. The schedule policies adopted by many of the insurance companies are not well adapted for the insurance of working men, as they are compiled on tables prepared for classes whose work is largely clerical or sedentary.

The frequency of actual simulation is much smaller than one would gather from medico-legal literature, and the cases, as a rule, are very easy of detection. On the other hand, more or less tendency to exaggeration is found in the majority of cases. Attributing to a recent injury conditions which pre-existed is perhaps the most common form of simulation: a decision on the matter may be difficult when the case is not seen soon after the alleged injury.

Just as in bacteriology we have certain postulates necessary to constitute proof of injury due to accident we require here:—

(1) There must be proof of the occurrence of an accident or injury.

(2) The accident and its effects must have occurred suddenly.

(3) The part affected must be located in the region injured.

It is astonishing to find how often these obviously essential data are unproven in cases of alleged injury.

Age. Injuries of young persons heal more rapidly than those of the old, and adaption to altered conditions is more complete and rapid. The immediate effect of injuries on the very young and very old is more marked than in adults. The predisposition to special diseases is greater at certain times of life, for instance, the liability to hernia in cases with advancing age.

Sex. Females need higher compensation for disfigurement than males. Slight disfigurement may be compensated only in case of females.

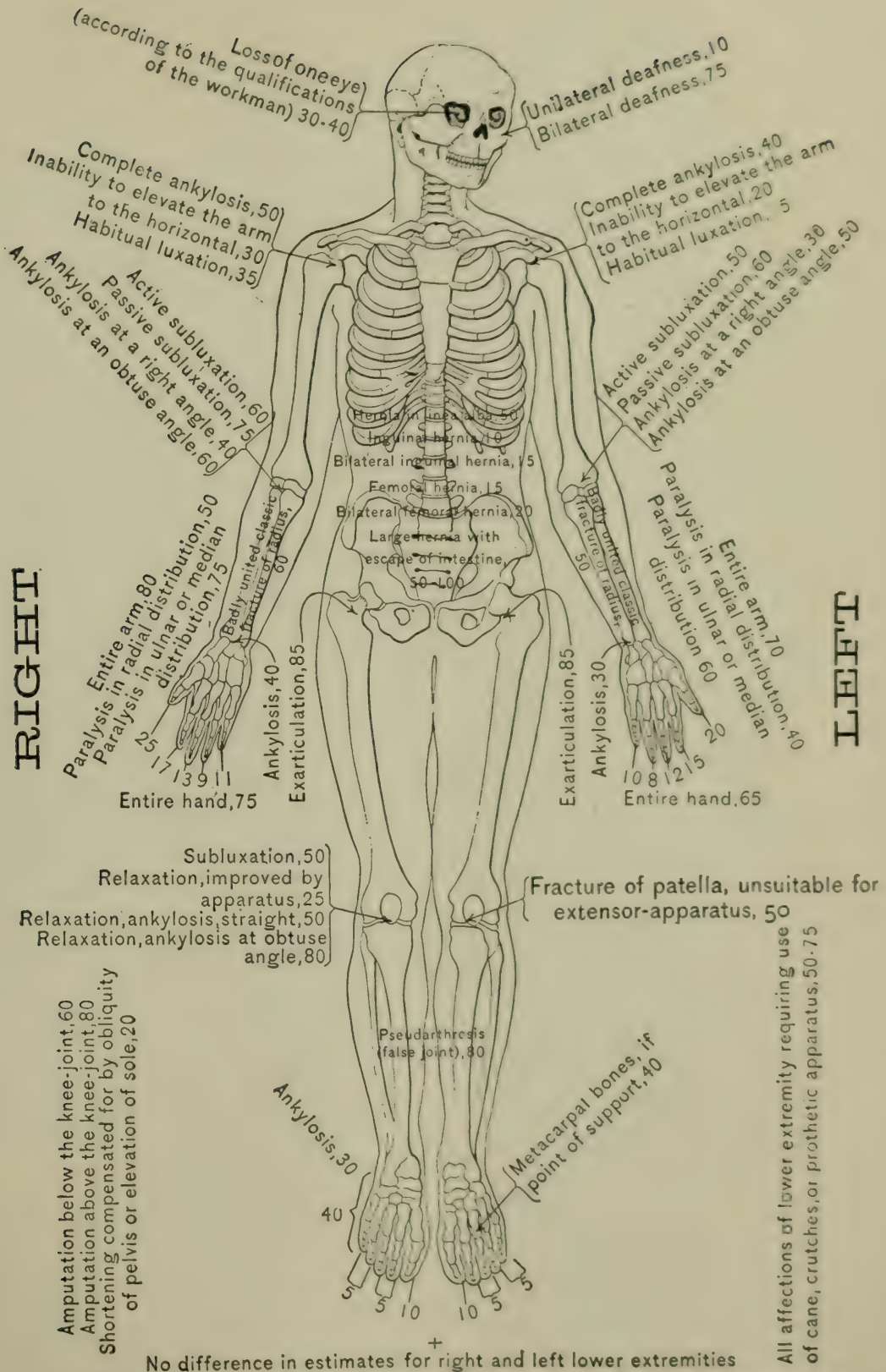
Previous Disease. The occurrence of an injury may leave a liability to the same injury. This is especially noticeable in dislocations, in abnormal conditions of the skin predisposing to erysipelas from trifling injury, or from exposure. Fragility of the bones from rickets or osteoporosis renders fractures more probable. The enlarged spleen in malaria is subject to injury. The existence of a latent or partly cured infectious disease, such as tuberculosis, may lead to unexpectedly bad results when persons are injured in the chest or subjected to a prolonged confinement. Disease of the ear greatly increases the danger of infection and meningitis in fractures of the base of the skull. Chronic heart diseases and

chronic lung diseases lessen the chances of recovery from a severe injury or shock, and influence unfavourably injuries of the chest wall. The enlarged (or pregnant) uterus is specially subject to injury from falls or other external causes. A latent appendicitis may be made acute by very moderate injuries of the abdomen. Rheumatic conditions may prolong the disability from injuries of the bones and joints. A disease may be the direct cause of the injury, as in epilepsy. The occurrence of disease as a consequence of injury is treated of more fully in another part of this article.

Alcoholism is one of the most important factors in regard to injury. Besides being a frequent cause of accident or neglect it may effect very unfavourably the chances of recovery. There is a great tendency amongst heavy drinkers, apparently in good health, to be seriously affected by relatively trifling injuries. The mere fact of confinement to bed through fracture of a bone is very liable, in a drinking man, to lead to an attack of delirium tremens, often followed by pneumonia. Hence, whenever practicable, methods of treatment which permit such patients to be up and about, are preferable. The grave effects of chronic alcoholism, such as ascites, renal cirrhosis, etc., lessen the chances of recovery and predispose to sudden death.

Occupation. Certain accidents are specially liable to occur as a direct result of the occupation; toxic effects from inhalation of poisonous fumes, effects of changes of temperature and absorption by the skin of poisonous substances, apart from the direct danger of mechanical injuries from falling bodies, defective scaffolding, or other support, moving machinery, or electric currents, etc.

Over-exertion in connection with employment may be brought about by accident and is a frequent cause of sprains, ruptured muscles or tendons, and of hernia. On the other hand, many conditions ascribed to simulating accident may be really gradual in onset and due to unhealthy occupations. These should be carefully excluded and hence suddenness of onset in accidental conditions is an important point to establish. Predisposing conditions due to occupation may aggravate the effect of accident. The occupation may be such as to render it temporarily unsuitable for persons who have been injured. A tendency to neuralgia, left after injuries, makes exposure to draughts or changes of temperature injurious. Conditions leading to a defective closure of the eyelids or to conjunctivitis excludes from occupations carried on in dusty places. A tendency to giddiness, partial deafness, much loss of vision, or inability to move promptly, makes it dangerous to continue an occupation which necessitates being in the presence of moving machinery or involves the perception of signals. Callings which bring the person much in contact with the public, are more or less debarred to persons having


(according to the qualifications of the workman) 30-40
Loss of one eye
Uni]lateral deafness, 10
Bilateral deafness, 75
Complete ankylosis, 50
Inability to elevate the arm to the horizontal, 30
Habitual luxation, 35
Active subluxation, 60
Passive subluxation, 75
Ankylosis at a right angle, 40
Ankylosis at an obtuse angle, 60
Complete ankylosis, 40
Inability to elevate the arm to the horizontal, 20
Habitual luxation, 5
Active subluxation, 50
Passive subluxation, 60
Ankylosis at a right angle, 30
Ankylosis at an obtuse angle, 50
Hernia in lineal scar, 50
Inguinal hernia, 10
Bilateral inguinal hernia, 15
Femoral hernia, 15
Bilateral femoral hernia, 20
Large hernia with escape of intestine, 50-100
RIGHT
LEFT
Paralysis in radial distribution, 50
Paralysis in ulnar or median distribution, 75
Entire arm, 80
Badly united classic fracture of radius, 60
Ankylosis, 40
Exarticulation, 85
Entire hand, 75
25 17 13 9 11
Badly united classic fracture of radius, 50
Paralysis in radial distribution 60
Paralysis in ulnar or median distribution, 40
Entire arm, 70
Ankylosis, 30
Exarticulation, 85
Entire hand, 65
10 8 12 15 20
Subluxation, 50
Relaxation, improved by apparatus, 25
Relaxation, ankylosis, straight, 50
Relaxation, ankylosis at obtuse angle, 80
Fracture of patella, unsuitable for extensor-apparatus, 50
Pseudarthrosis (false joint), 80
Ankylosis, 30
40
Metacarpal bones, if point of support, 40
5 5 10 10 5 5
Amputation below the knee-joint, 60
Amputation above the knee-joint, 80
Shortening compensated for by obliquity of pelvis or elevation of sole, 20
All affections of lower extremity requiring use of cane, crutches, or prothetic apparatus, 50-75
+
No difference in estimates for right and left lower extremities

G. Haag's graphic schedule showing the percentage-loss of earning-power through permanent partial disability. (Compensation allowed equal to 60% of disability under the state system of compulsory insurance of workmen.)

Reproduced from Gould's American Year Book of Medicine and Surgery. (By permission of W. B. Saunders, Philadelphia.)

mutilating or disfiguring injuries; and those which necessitate shouting out orders, to persons whose vocal organs have been permanently damaged. The percentage frequency of the common forms of accident vary greatly in rural and urban districts.

In persons who have been injured, one has to determine if the disabling effects are transient or permanent, and if such permanent conditions will improve, remain stationery, or get worse. When an annuity is paid, this may be increased or decreased according to the course of the case. The chances of ultimate recovery are often greatly enhanced by such measures as may relieve the person from the necessity of attempting heavy work before he is fit for it. On the other hand, the definite and final settlement of a claim one way or another, often has a wonderfully beneficial effect upon cases represented as being quite hopeless, and it is certain that the annuity system by no means tends to bring about the cures and lends itself to grave abuses.

The relative frequency of percentage compensation was found in Germany to be in the following order: 10, 20, 15, 50, 33, 25, 100, 30, 40, 75, 60, 66, 80, 90, 70. Thus 10 per cent. was the most and 70 the least frequent of the allowances made; the average was 30 per cent., disability below 10 per cent. not being compensated.

It is a matter both of common law and of regulation, that persons receiving such indemnity would take every reasonable means to favour the cure. It is quite common everywhere for the interested party to pay for the medical treatment. The occupation followed should be one which will favour recovery. The employment of artificial limbs and supports may be a reason for reducing the indemnity.

I. SCHEDULE OF PERMANENT DISABILITY.

The following table shows the percentage of loss of earning power, in the case of unskilled laborers.

I. Head.	Disability per cent.
Limitation of movement	8-16
Bone defect with epileptic attacks	50-70
" " " paralysis right arm	80
" " " " " and leg	100
Scar and bone defect of cranium attacks of pain	33
Hemiplegia following apoplexy	80-100
Headaches and weakness of right arm following depressed fracture.	56-60
Incurable neuralgia	15
Persistent headache, dizziness, nausea following concussion of brain	80
After injury headache, dizziness, epistaxis " "	50
Incurable despondency, irritability and headache	50
Incurable epilepsy only result	30-50
Incurable insanity	100
Permanent weakening of mental faculties, loss of memory	40-50
Weakness, unsteady gait, lessened mental capacity, confusion of ideas following fracture of skull	70-80

II. Face.	Per cent.
Disfigurement from scars of cranium (more in case of females)	8-16
Loss of nose do	10-15
Loss of incisor teeth (females only)	5
Defective closure of one eyelid,	8
" " both	16
Incurable trismus	33
III. Eyes.	
Loss or blinding of one (according to employment)	25-33
Loss of both eyes	100
Defective sight one eye	25
Trachoma extreme	100
Chr. conjunctivitis	15
Obstruction of lachrymal duct	8
Nystagmus	16

Josten's table for estimating loss of vision, partial in both eyes.

Rule.—Estimate loss of central vision in each eye if over 50 per cent. (amounts below 50 per cent. disregarded).

Follow column giving the vision of one eye below V. and of the other eye to the right of V, the intersection of the column will be at the percentage of disability for both eyes.

V.	0.50	0.40	0.30	0.20	0.10	0.00
0.50	0	6.5	13.5	20.0	26.5	33.5
0.40	6.5	14.5	22.0	30.0	38.0	46.0
0.30	13.5	22.0	31.5	41.0	50.0	60.0
0.20	20.0	30.0	41.0	52.0	62.5	73.5
0.10	26.5	38.0	50.0	62.5	75.0	87.0
0.00	33.5	46.0	60.0	73.5	80.0	100.0

IV. Ears.	Per cent.
Loss of one ear (or complete deafness one ear.)	8
Moderate deafness one ear	0
" " both ears unless occupation needs acute hearing)	0-8
Slight deafness both ears	0
Chr. discharge from ear	15-30
V. Neck and Voice.	
Permanent wearing of tracheotomy tube	50
Inability to read (alexia)	75
Inability to speak (aphonia)	40
Hoarseness or whispering voice	8
Dyspnœa from stenosis of larynx	33-40
VI. Chest.	
Restricted movement from distortion of chest wall, extreme	60
" " " " " moderate	33
" " " " " slight	8
Restriction of movement from badly healed fracture of ribs, extreme	40
" " " " " medium	25
" " " " " slight	8
Intercostal neuralgia	25
Lung disease, severe	100
" medium	40
" slight	0-8
Traumatic heart disease	0-100

VII. Abdomen.

Pain in abdominal wall and inability to carry heavy burdens, due to rupture or sprain of muscles	25
Prolapse of uterus	25
Disturbances of digestion, extreme	80
" " medium	25
" " slight	0
Liver diseases, extreme	80
" " medium	25
" " slight	0

VIII. Hernia.

Hernia in laparatomy scar	25
Umbilical hernia	15
Ventral hernia	25
Inguinal hernia	8
Omental hernia	8
Femoral hernia	15
Hydrocele of cord	15

IX. Genito-Urinary.

Inability to retain urine	15-20
Difficult micturition	15
Loss of penis	8
Loss of testes	15
Urinary fistula	50
Painful enlargement of testes and spermatic cord	15
Rupture or loss of kidney	20

X. Trunk and Vertebral Column.

Impaired mobility, extreme	50
" " medium	25
" " slight	8
Rupture of lumbar muscle, severe	50
" " " medium	25
" " " slight	8
Disease of spinal cord. severe	100
" " medium	66
" " slight	40

XI. Upper Extremity.

Loss of both hands or arms	100
Upper Arm.	
Loss of arm above elbow	66-75
Anchylosis at shoulder	50-60
False joint at shoulder	50-60
Wasting of muscle	25-60
Chronic arthritis of shoulder	16-66
Badly set fracture of clavicle	16-50
Badly healed dislocation, blade injuries	8-50
Forearm.	
Loss at wrist or elbow	66-75
Anchylosis of elbow, extended	40-50
" " semi-flexed	25-33
" " flexed	33-40
False joint	50-60
Diminished flexion or rotation	25-60
Hand or all Fingers.	
Loss at wrist	66-75
Anchylosis of wrist	25-33
Loss of all fingers but not metacarpals	66-75
Anchylosis of all fingers	60-66
Distorsion of all fingers	60-66

Single Digits.

Loss of single thumb, loss of metacarpal	25-33
Loss of both phalanges	25-33
Terminal and ½ proximal	16-25
Terminal phalanx	5-10
" thumb tip (special trades only)	0-5
Stiffness 1st and 2nd joint	25-33
" 1st joint	15
" 2nd "	8
Distorsion and fixation in flexed position, extreme	25-33
" " " medium	16-25
" " " slight	8-16

Forefinger.		*Middle finger.*	*Ring finger.*	*Little finger.*
Loss with metacarpal	16-25	8-16	8-16	0-8
Loss of all 3 phalanges	16-25	8-16	8-16	0-8
Loss of 2nd and 3rd phalanges	8-16	8	8	0
Loss of terminal	0	0	0	0
Loss of finger tip	0	0	0	0
Anchylosis of all three joints	16-25	8-16	8-16	0-8
" proximal and middle	16-25	8-16	8-16	0-8
" proximal	8-15	8	8	0
" middle	8	8	8	0
" proximal and terminal	15	8	8	0
" middle and terminal	8-16	8	8	0
" terminal alone	0	0	0	0
Fixation in flexed position, extreme	16-25			
" " medium	8-16			
" " slight	0-8			
Chronic arthritis of one finger	8-33			

Thumb.

Thumb and fore	40-50
" middle	33-46
" ring	33-40
" little	25-33
Thumb, fore and middle	50-60
" " ring	50-60
" " little	40-50
Thumb, fore, middle and ring	60-66
" " " little	60-66
Thumb, middle and ring	50-60
" " little	33-40
" ring and little	33-40
Fore and middle	25-33
" ring	25
" little	16
" middle and ring	40
" " little	33
Middle and ring	16
" little	16
Middle, ring and little	25
Ring and little	16

Combined loss of fingers of both hands.

Loss of all fingers on both hands except one finger on each	100
Loss of both thumbs	50
Thumb and forefinger of one hand, and opposite thumb	55-60
Thumb, forefinger and middle or ring finger of one hand with loss of other thumb	66-70
Loss of all fingers of one hand except forefinger and loss of opposite thumb	75
Loss of both fingers and forefinger	80
Chronic arthritis of several or all joints of both hands	30

XII. Lower Extremity.

Loss of both legs	100
One thigh and one leg	100
Complete paralysis both legs	100
Chronic arthritis	16-66
Injuries to pelvis	16-80
" " fibrous tissues	60
Synovitis	8-33
Tenosynovitis	8-33
Thigh.	
Loss of thigh	75
Anchylosis of hip, extended	50
" " flexed	60
Wasting muscles of one thigh	33
Healing of fracture with diminished motion of knee or ankle or both	25-66

For neuritis, or injury of nerves 25 per cent. more than for loss of limb.

Leg.	
Loss below knee	66
False joint at ankle	40-66
Anchylosis of knee, extended	40
" " flexed or over extended	50
False joint at knee	60
Foot.	
Loss at or below ankle	66
Injury to ankle bones	16-40
Anchylosis of ankles with flat foot	40
" " with	50
Chr. arthritis of one or more joints	15-50
Toes.	
Lower extremity foot	8
Loss of great toe	10
" any other toe	6
" all toes of one foot	50

With 5-10 per cent. more for loss of metatarsal bones.

II SCHEDULE OF TEMPORARY DISABILITY.

The following table compiled from the statements of the various standard authorities, notably C. Kauffman, shows the duration of temporary disability and some of the commoner complications and consequences of frequent forms of injury.

Explanation of abbreviations :

Numbers indicate duration of disability in weeks ; unless otherwise stated.
p.p.d., permanent partial disability.
per cent., percentage loss of earning power.
p.t.d., permanent total disability.
B., confinement to bed necessary.
H., treatment in hospital preferable.
F., likely to be fatal.
Complications are enclosed in brackets.

HEAD.

Scalp : *Contusions :* Slight, 1—2 ; severe, 2—6 ; (blood cysts, neuralgia, varicosities.)

Wounds ; 1—2, B. ; *Lacerations :* 2—6, B. ; (4—8, F. ; erysipelas, 4—12, H. F. ; wandering erysipelas, 8—26 ; loss of hair ; sensitive to heat and cold ; neuralgia ; insanity ; sensitive scar ; epilepsy, aura from scar).

Cranium : *Contusions :* Same duration as scalp wounds ; (osteoma, osteosarcoma).

Fracture : Vault or base, 1—6 months, H. ; often p.t.d. or p.p.d ; (meningitis, F. ; encephalitis, F. ; abscess, F. ; thrombosis and pyæmia, F).

Brain : *Concussion :* H. ; immediate unconsciousness lasting hours or days, vomiting.

Compression : H. ; slow, hard, irregular, pulse.

Contusion : H. ; cramps, spasms or paralysis immediately after injury. In compression, contusion and concussion, (mental disturbances ; paralysis ; tinnitus ; headache ; impaired vision, hearing and speech ; tuberculous meningitis ; diabetes ; polyuria ; white softening ; chronic brain abscess—headache and dizziness, exclude ear disease ; brain tumours ; epilepsy ; insanity—connection recognised if early after accident).

Face : *Cuts, Lacerations and Contusions :* 1—4 ; heal rapidly ; (salivary fistula, 4—8 ; erysipelas, 3—4 ; relapses frequent).

Burns : if superficial, 2—4 ; from boiling liquids and explosions ; deep, or corrosions ; (scarring and disfiguring require plastic operations—important in young women ; obstruction of orifices ; ectropion ; danger of foreign bodies ; paralysis of facial).

Fractures : of nose, 2—4 ; (lachrymal fistula, traumatic ozæna, malposition in setting) ; of malar bone, (rare) 3—6 ; of superior maxilla : 4—10 (necrosis) ; of inferior maxilla, 4—10, (necrosis, aspiration pneumonia).

Loss of Teeth : disfigurement ; (10 per cent. p.p.d to young women for loss of incisors).

EYE.

Eyelids : *Contusions :* 1—3. *Lacerations :* 2—4 H. ; *Burns :* 3—10 H. ; *Stabs and Cuts :* 1—2 ; (ectropion, entropion, ptosis, 2—4, H. ; operation).

Conjunctiva : *Foreign Bodies :* 1—3. *Lacerations :* 1—3. *Burns :* caustics (keratitis, synblepharon. Trachoma—when case infection occurs accidentally in course of treatment).

Cornea : *Foreign Bodies :* not infected, 3—7 days ; infected, 1—4 ; (loss of sight).

Contusions : 4—8, (hypopyon, loss of vision, phthisis bulbi, liable to take unfavourable course later).

Wounds : non-penetrating, seen early, 1—2 ; if neglected, 2—6, B. ; (hypopyon). Penetrating cuts and stabs, 1—2 ; not infected.

Lacerations : 6—12, B. ; (iridectomy, cataract later, opacity of cornea—central or peripheral).

Sclera : *Wounds :* superficial, 1—2 ; perforating,—involving ciliary body, choroid, retina, or with foreign bodies, non-suppurating, 6—12 ; often loss of vision later. Suppurating, 6—26 ; loss of eye, (sympathetic ophthalmia).

Iris : *Contusions :* paralysis of accomodation, traumatic mydriasis, 6—10. Separation of iris, no operation, 2—4, B. ; operation, 4—12, B. ; (p.p.d., loss of vision).

Foreign Bodies : non-septic, seen early, 2—4 B. ; septic, (panophthalmitis), 4—6 B. ; loss of eye.

Wounds : usually severe iritis, prolapse of iris and dislocation of lens, 4—12 ; (often panophthalmitis).

Lens : *Rupture of capsule :* resorption, 6—8 ; (in young persons). Inflammation, 4—16, H.

Foreign Bodies ; opacity and suppuration requiring extraction, and perhaps secondary operation, 2—15 months, H.

Wounds : operation usually required, 2—6 months, H. Note : Resulting

aphakia cannot usually be corrected by glasses during work if other eye sound. Eyes operated on for cataract require almost same compensation as for loss—30 per cent. Loss of eye with cataract suitable for operation, 20 per cent. Blindness of one eye when the other has a cataract, 70 per cent. if successfully operated.

Choroid, Retina and Vitreous: *Contusion and Hæmorrhage*, 4—8, B.

Retinal Hæmorrhage: slight, 2—6, severe, 4—12; (severest forms near macula, good prognosis only if prompt recovery; detachments usually incurable).

Foreign Bodies: good results in 6 per cent.; 6—12, H.; (usually panophthalmitis and sympathetic ophthalmia).

Wounds: non-suppurating, common, 6—10. Suppurating call for enucleation; 6—12, H.

Orbit: *Foreign Bodies:* small, not dangerous; large, dangerous from suppuration; (meningitis).

Wounds: stabs and cuts from instruments or splinters; if suppuration, 4—20 H.; (meningitis, F).

EAR.

Lobe: *Contusions and Abrasions:* 1—2.

Lacerations and Cuts: 1—4.

Burns and Corrosions: 2—6, (deformity or defect; hæmatoma; stenosis of meatus).

Meatus: *Foreign Bodies and Injuries:* 1—2; (entrance of water; blow on jaw; fracturing skull).

Tympanum: *Rupture:* foreign bodies usually in upper part; (separation of ossicles; fracture of malleus or stapes); indirect injury from blow, fall, alteration of air pressure or explosion; 1—8, B.; (purulent otitis prevented by aseptic measures; curable; subjective noises may persist for months; persistence of perforation or recurrence of ear disease).

Tympanic Cavity: *Foreign Bodies:* cause suppuration (meningitis); hæmorrhage, 6—15; (deafness may persist; polypus; bone necrosis; complete healing necessary before beginning work).

Labyrinth and Nerve: *Concussions:* blows and falls, striking head or any part of body; explosions and noises; (dizziness, loss of co-ordination, tinnitus); 8—12; often incurable.

Hearing: Slight or medium deafness of one ear, 0; severe, one ear, 10 to 30 per cent.; deafness of both ears, 30 per cent.; (chronic ear disease shortens expectation of life; abscess; mastoiditis, pyæmia, F).

NECK.

Corrosions and Burns: (scarring and fixation). Injury to deeper tissues from explosions and lacerations; (larynx, hyoid, trachea, vessels and nerves exposed); injury of carotid, or jugular, usually F.; after ligature, paralysis or aphonia in 30 per cent. of cases.

Hyoid Bone: *Fracture;* 3—6; (dysphagia).

Larynx: *Contusions:* may be fatal from shock.

Fractures: dangerous; also dangerous after tracheotomy from obstruction of tube (disturbance of speech; difficulty of changing canula; supervision required).

Loss of Speech: aphonia and hoarseness; (asymbolia; asphasia; alexia from central lesions).

CHEST.

THORAX : *Concussion :* (shock fatal (?) ; loss of consciousness ; syncope ; heart and lung diseases).

Contusion : slight from blows or falls ; ecchymosis of skin and muscles ; 1—2. Severe, from crushing ; may have internal injuries with little injury of chest wall ; (lesions of heart, diaphragm, and vessels) ; often fatal ; may heal in 1—4 ; or lead to chronic disease.

Fractures sternum, simple, 4—10 ; compound, usually fatal ; (cough, palpitation of the heart, dyspnœa, suppuration and abscess) ; of ribs simple, not dangerous, 5—12 B. ; (danger in old persons of lung disease). Compound fracture, (hæmothorax ; heals after aspiration, rarely suppurates ; pleurisy, heals readily with adhesions, may suppurate, 2—4 months, H. ; (pneumonia, œdema of the lungs, neuralgia at site of injury, fistula, caries of rib,—tuberculous but curable, 2—4 months,—lung tuberculosis most fatal).

Wounds : burns, (scarring and contraction) stabs and cuts are rare in industrial accidents. Wounds of chest and lung generally curable unless involving large vessels, but suppuration common. Heart wounds : not always rapidly fatal, unless in auricles, sometimes curable. Rupture of diaphragm. from falls and run over accidents, usually associated with fatal injuries.

Heart Disease : Traumatic forms include (1) acute endocarditis, (2) chronic endocarditis, (3) rupture of valve, (4) nervous heart disturbance, (5) pericarditis, (6) aggravation of existing disease ; after injury, psychic shock or over exertion. Heart dilatation a prominent symptom in serious cases.

Lung Disease : Traumatic forms include (1) acute traumatic lobar pneumonia, (2) localized traumatic pneumonia, (3) bronchopneumonia, (4) secondary pneumonia, (5) laceration of lung, (6) gangrene, (7) traumatic tuberculosis of lung, (previous condition of lung important, also previous health). Main diagnostic symptom of traumatic pneumonia, early appearance of bloody expectoration.

Traumatic Pleurisy : 50—60 per cent. recoveries.

ABDOMEN.

ABDOMINAL WALLS : *Contusions :* Ruptured muscles from direct violence, overstretching and heavy lifting, usually in recti below umbilicus, 4—6.

Perforating Wounds : without injury of organs, usually heal readily, 2—8 B. ; (prolapse of omentum or intestine).

STOMACH : *Contusions :* from compression against vertebræ, 1—3 months ; (gastric ulcer may follow, 4 per cent. due to trauma, hæmatemesis leading symptom).

Stabs and Cuts : operation immediate ; 2—3 months.

INTESTINE : *Wounds :* same as stomach. *Contusions and Lacerations*, operation imperative ; unless early operation, are fatal from peritonitis, gangrene or hæmorrhage.

LIVER : *Contusions :* occasionally occur. *Lacerations :* common ; result good by early laparatomy, otherwise fatal.

SPLEEN : same as liver ; often no injury to abdominal wall ; (constitutional disturbances after removal).

HERNIA : *Inguinal :* predisposition exists in most cases ; sudden onset necessary to show traumatic origin ; immediate pain and inability to work ; enlargement of ring or enlarged veins point to pre-existing hernia ; causes, direct violence, lifting or heaving, in heavy work ; early examination needed, improbable when simultaneous double hernia, or unilateral hernia with en-

larged ring on opposite side, or inguinal testis exists. Old hernia may be demonstrated: (1) by records of examination for military service, or accident or life insurance; (2) signs of truss; (3) size larger than lemon; (4) irreducible but not strangulated; (5) inguinal canal short and wide. Hernia can rarely be stated to be quite recent; burden of proof rests with claimant. Indications for gradual onset: (1) continuous heavy work; (2) advanced age; (3) statements that a moderate load was found too heavy. Compensation based on 10 per cent. disability, less in females, double hernia same compensation as single as same truss suffices; increase compensation when truss is worn with difficulty or causes inflammation, or if hernia suddenly increases while wearing a proper truss.

Strangulation is to be compensated for if due to injury or over-exertion. Strangulation of a hernia already compensated for may be admitted if a good truss is worn, but not unless worn at time of accident. Always examine both sides to see if recent or old; always test efficacy of truss after application.

Femoral, umbilical and ventral: same as inguinal, but may require more compensation as truss is less easily applied.

KIDNEY: *Concussion and contusion:* hæmorrhage and traumatic nephritis; (casts and blood after a few hours, albuminuria); may be fatal.

Lacerations: may be free from symptoms (blood) in a few days, 4—10, H.; hydronephrosis: *floating kidney* requires bandage or operation.

BLADDER: *Rupture:* from direct violence or lifting, one-third of operated cases recover; 4—12, H.

URETHRA; *Lacerations:* in pelvic fractures, 40 per cent. fatal; from straddling falls, 14 per cent. fatal; 6—12, H.; may leave stricture; liable to relapse.

PENIS: *Contusions and crushing:* 2—4; *lacerations:* 3—8 B.; 2—3 months (deformity).

TESTIS: *Contusion and Concussion:* 1—2; liability to sudden death from shock; hæmatocele, 3—4; hydrocele, 4—6; purulent inflammation, 4—8, (spermatocele and varicocele); loss of testis, 10—15 per cent. if double, or much more if followed by hypochondriasis.

FEMALE GENITALS: *Abortion* from injury of pregnant uterus, *prolapse* from over-exertion; signs of recent origin, pain and tenderness, acute inflammation, absence of chronic inflammation, ulcers, thickening and attrition.

TRUNK AND SPINAL CORD: *Rupture of muscles:* 3—10, B.; lumbago, usually rheumatic in origin, chief difficulty of diagnosis.

Contusions: 1—3 months; contusions of vertebræ, slight, without injury of cord, 1—4 months, B.; severe, may last months or years or give p.t.d.

Fractured vertebræ: 6—12 months. *Dislocation:* same as fracture; (inflammation of spinal membranes, meningocele, meningeal hæmorrhage, myelitis or sclerosis of cord, paralysis, bed sores, cystitis, often fatal).

UPPER EXTREMITY.

CLAVICLE: *Fracture:* 5—10; sometimes bilateral; in women greater need to prevent deformity by B. and traction; (injury to nerves and vessels, overgrowth of callus, shortening, disfigurement, false joint may require suture, effect on movement, atrophy of deltoid).

Dislocations: 4—12, H.

Fracture: of blade or acromion, 6—8; usually no permanent disability, but may prevent full motion of arm.

Of neck, 6—12; injury of axillary nerve and paralysis of deltoid; danger of stiffness of shoulder joint and difficulty in raising arm.

SHOULDER : *Contusions :* great functional disturbance at first ; rapidly relieved by treatment ; 4—8.

Sprain : swelling and tenderness in anterior part of capsule ; healing prompt ; 4—8.

Dislocation : if promptly recognized and reduced, 4—8, with no further results ; (separation of great tuberosity and fracture of head of humerus, 6—10 ; if dislocation reduced, may have complete cure ; otherwise, pressure on vessels and nerves require subsequent operation ; primary injury to to nerves or compound wounds ; paralysis of circumflex nerve and atrophy of deltoid ; recurrent dislocation from trifling causes happens when arm is used a few days after reduction ; old dislocations occur through non-recognition in early stage, usually in cases not seen at first, attempts at reduction may cause injury to nerves or vessels or fracture of humerus).

HUMERUS : *Fracture :* separation of great tuberosity often confused with sprain, 8—12 ; old cases good objects for mechanical treatment, 2—4 months, may have p.p.d, from limited mobility in raising arm or chronic arthritis. Anatomical neck or epiphysis, 8—12, best results from extension.

Compound Fracture : 2—4 months ; (injury to radial nerve, operation ; injury of axillary artery, operation, 8—10).

AXILLARY VESSELS : injured by external causes or in reducing old dislocations ; may be fatal ; usually p.p.d. from weakness of arm and disuse of shoulder.

AXILLARY NERVES : *Injury and contusions of shoulder or crushing :* if severe, complete and incurable paralysis of arm ; in slight cases, neuralgia ; (neuritis from crutches).

SYNOVITIS OF SHOULDER : liable to occur in persons carrying burdens or from injury ; 3—6 ; paralysis of deltoid from prolonged rest and fixation, besides causes given above.

SHAFT OF HUMERUS : *Fractures :* 8—12 ; if transverse, extension and B., if fragments override ; compound, non-infected, the same as simple ; if infected, may need amputation ; (nerve injuries, usually to radial ; malposition requires operation ; false joints).

ARM MUSCLES : *Laceration :* of muscles and tendons, common ; in biceps, separation of scapular origin in heavy lifting ; (atrophy and weakness of flexors).

NERVES OF ARM : *Crushing or section :* (neuralgia, suture, stretching, paralysis and trophic injuries, blebs and ulcerations of hands and fingers after injury of median and ulnar). Note : Examine condition of nerves, test sensation, etc., before applying splint, to demonstrate primary injury.

ELBOW : *Laceration or burns of skin :* scarring, 8—12 ; may require plastic operation.

SYNOVIA : over olecranon, injured by falls ; may suppurate if neglected, 4—6, B.

BICEPS TENDON : *Section or rupture :* suture.

ULNAR NERVE : injured in dislocations.

ELBOW JOINT : *Sprains :* usually associated with hæmorrhage ; 4—6 ; stiffness cured by mechanical treatment.

Contusions : posterior and inner surface ; inflammation of bone ; 3—8.

Dislocation : backward most common ; 1—2 weeks after reduction may begin passive motion ; 4—8 ; often limitation of movement.

Fracture through elbow : stiffness is now less frequent owing to mechanical treatment ; compound, good results if properly treated ; (infection ; nerve injuries, p.p.d. mostly from interference with nerves of hand).

Fracture through condyles, 8—12, B. ; deformity, operation.

Forearm : *Contusions :* usually heal well, even with much swelling ; 4—8;

Wounds : often complicated with injury of vessels, nerves, and tendons ; suture beneficial even years later.

Crushing : causes extensive separation of skin ; 4—12 H. ; often p.p.d.

Fractures : of both bones, 8—12 ; (ischæmic paresis of muscles from tight bandaging ; at first easy to treat ; if only noticed after removal of splints, leaves permanent effects ; interference with pronation and supination from bony adhesions, callus, or malposition, require operation ; false joint, may not cause disability ; in other cases, operation and fixation needed ;) treatment by extension in supine position.

Fractures of Ulna : in upper third, often dislocation ; 8—12 ; old neglected cases cause functional disturbance, operation and resection of head of radius or ulna.

In middle or lower third, 8—10 ; (pseudarthrosis or impaired rotation).

Fractures of Radius : in upper and middle thirds, pseudarthrosis if fragments not opposed but one supine and the other prone ; in lower thirds, Colles' Fracture forms 10 per cent of all fractures, often called fracture of the forearm ; or treated as sprained wrist ; 3 weeks fixed and 4 weeks gymnastics ; massage good, even in worst cases, but may take one to two years. (fracture of lower end of ulna may leave pain and disturbed function ; comminution of lower fragment, or fractures of carpal bones ; compound fractures, results bad ; worst results due to paralysis from tight plaster bandage).

Wrist : *Sprain :* massage, 2—4 ; with rest treatment, function disturbed for months ; heavy work might be better done than delicate hand movements.

Dislocation : rare ; usually means fractured radius.

Tenosynovitis : suppuration, 2—4 ; often relapses ; common about thumb in certain occupations, smith, carpenter, joiner, farm labourers, washerwomen.

Hand and Fingers : *Contusion and crushing :* from severe injuries, hence often protracted ; in crushing of ungual phalanx, remove nail to lesson risk of infection ; 2—4.

Sprains : 2—6 ; often lead to stiff joint with thickening ; benefited by massage.

Dislocations : rare ; Röntgen ray examination important ; 3—6 ; operation gives good results.

Fractures : bony union, 3—8 ; if soft parts are much injured and inflamed, 4—12 B.

Wounds : early treatment important ; first aid should be simple, water dressings, or iodoform gauze ; unskillful use of carbolic acid or perchloride of iron liable to produce gangrene ; infection of wounds most important, and phlegmon may occur through infection by callosities or small foreign bodies.

General considerations for assessing cases of hand injury.—The younger the person the greater the chances of adaptation ; new conditions or change of employment and ultimate improvement of condition ; heavier compensation needed for old persons. Sex : Men are better able to find work with injured hand than women, as the latter do chiefly fine hand work ; common labourers do not use fine finger movement ; skilled labour needs especially high compensation, if the injured finger is used in special occupation ; women require special compensation for deformity ; previous injury, if not already compensated for, should increase the amount of disability. Estimation of the loss of power of hand or arm to be tested quantitatively, the angle to which flexion is possible and the force in various parts to be tested and compared with the opposite hand ; the special effects of injury to nerves, as seen in the claw hand from beginning of the ulna nerve with the loss of

apposition of thumb, in which the hand is quite useless. In the radial nerve, absence of extension and abduction ; in median nerve, loss of apposition, separation of fingers, loss of power of flexion, Dupuytren's contracture and ulcers also cause disability. Degeneration of muscles, electrical tests.

LOWER EXTREMITY.

Pelvis : *Contusions :* extensive ecchymosis, removable by puncture ; separation of tissues (infection) ; 4—8, B.

Sciatic Nerve : Contusions : by falls or tumbling over when kneeling or squatting ; 4—12, B. ; (cramps and prolonged sciatica, nerve stretching, or section and suture).

Fracture : often multiple, always severe, gravity depends on implication of pelvic organs especially urinary tract ; 2—4 months ; (injury of urethra, 3—6 months, H. ; often p.p.d. ; fracture through acetabulum may affect hip joint).

Hip : *Contusions :* often present extensive separation of the skin and extravasation of blood or lymph ; 4—8, B. ; (contusion of groin, 1—2 ; often infected from injury of glands ; rupture of psoas muscle, after severe exertion, pushing or lifting, 4—10, B. ; injury of great vessels, danger of immediate bleeding, or gangrene of whole or part of leg).

Hip Joint : *Sprains :* rare.

Contusions : falls on trochanter ; 3—6, B. ; if simple contusion healing good.

Dislocations : reduced when recent, 6—12, B. ; fracture of acetabulum may make reduction harder, extension apparatus, 8—12, B. ; in fracture of neck, dislocation unreduced ; with union in good position, the gait is less disturbed than in simple unreduced dislocation ; injury of great vessels may cause death from bleeding and gangrene ; old unreduced dislocation may be reduced without operation, but latter is preferable ; in unreduced dislocation, first, crutch used, then stick ; if paralysis and pain remain from head of femur, it should be resected.

Thigh : *Contusions :* extensive and severe functional disturbance ; 4—10, B.

Laceration of muscles : adductors or quadriceps ; in tendons, suture required ; results good ; 4—8.

Wounds : complicated by infection, dangerous ; after injury of large vessels, gangrene ; crushing commonly from run-over accidents.

Femur : *Fracture :* of neck ; intracapsular, rarely gives bony union in old people, 2—6 months ; always have partial or total stiffness of hip-joint and shortening with a limp ; (in old people, often bed sores and hypostatic pneumonia ; extension and long splint) ; usual cause, external violence in long axis or axis of trochanter ; rarely spontaneous ; in impacted fractures, may walk with stick ; often only sprain diagnosed and short rest in bed ordered ; these cases later have profuse callus and anchylosis of joint.

Of shaft, simple, 3—4 months, H. ; extensive twisting or separation of fragments, common ; treatment by plaster ; shortening usually considerable ; malposition may require osteotomy ; compound fractures heal well with good treatment, but if thigh is crushed, amputation indicated ; (malposition ; shortening ; false joint, requiring fixation apparatus and walking out ; stiffness of knee joint from inaction, requiring gymnastic treatment ; relaxation of ligament, needing apparatus ; atrophy of quadriceps ; paralysis of peroneal nerve, from over extension of knee).

Knee : *Wounds :* from falls, corrosions, cuts and bites ; danger to popliteal vessels ; in neglected cases, purulent arthritis,

Contusions: with bloody effusions, 4—8, B. ; on knee cap, bleeding into bursa.

Sprains: slight, 1—2 ; severe, 4—12, B. ; (relapsing synovitis with effusion ; uncertain gait ; fatigue and tendency to fresh sprain ; may cause fixation ; stiffness in joint with exostoses, p.p.d. ; muscle atrophy ; rupture of internal lateral ligament, 5—10, B., and apparatus, 1—2 years.

Dislocations: from severe violence ; good results if seen early ; 2—4 months, H. ; anterior and posterior dislocations often complicated by injury to vessels.

Patella : *Dislocation :* 3—12, B. ; readily healed if replaced but liable to recur ; if unreduced, motion is impaired.

Semilunar Cartilages : *Rupture* · impaired motion requiring operation ; floating cartilage.

Knee Joint : *Fracture through :* 8—12, B. ; if comminuted, 8—16 ; if transverse ; (fibrous union ; with stiffness, mechanical treatment, 1—2 years ; weakness of quadriceps) ; fracture through condyles, 8—16 ; fracture through upper end of tibia, 12—24 ; (stiffness often results).

Leg : *Wounds : contusions : abrasions :* periostitis often diagnosed when merely bandaging bad ; varicose veins, special care necessary ; also if scars or ulcers are injured ; varicosity aggravated by accident and may lead to ulcer ; to be compensated if the direct result of accident ; *thrombosis* common, apart from varices ; pain felt in leg with swelling following ; patient may work one or two weeks with increasing pain before disabled ; if the accident can be proved, thrombosis may be regarded as due to it even if work is continued during interval.

Laceration : of muscles and sinews in calf, often tendo achilles ; 8—12 ; suture.

Fracture : shaft ; usually of both bones ; 4—6 months ; (stiffness of joints from disuse, massage beneficial ; malposition often leaves an angle ; pain from pressure on nerves ; eversion of foot, osteotomy ; X ray diagnosis important, callus at first transparent ; may have delayed union and false joint ; if treated by plaster splint or allowed to walk with apparatus, operation rarely necessary ; swelling of foot and ankle from interference with vessels or thrombosis relieved by massage to restore muscular tone, or by passive motion of joint ; thrombosis likely in advanced age ; compound fractures, 4—8 months, H. ; often leave necrosis of bone, fistulæ or ulcers).

Ankle : *Sprain :* usually from falling or jumping ; best results from massage ; 2—6 ; (swelling and radiating pain ; uncertain gait and tendency to sprains ; stiffness, if kept at rest during the cure ; good results by massage and mechanical treatment ; persons with varicose veins suffer most).

Dislocation : anterior or posterior ; 8—12, B. ; less disability from badly healed anterior than posterior : calcaneus position than equinus ; operation with good result ; subastraguloid, prognosis good ; in neglected cases, only hope of improvement is operation ; dislocation with fracture of astragalus, good if replaced, otherwise pain persists.

Fractures : through malleolus of fibula ; 2—4 months ; position of foot most important ; danger of subsequent stiffness.

Fractures compounded from injury by bone fragments ; (pressure necrosis ; swollen foot and leg ; thrombosis ; embolism ; and stiff joint, permanent if from callus, often in equinus position ; *flat foot* if fibular fracture set without correction of position ; prevents climbing and standing long, never perfectly healed benefitted by plate).

Fracture of malleoli, either the inner or outer may break ; the commonest form, Pott's fracture of fibula and inner malleolus. Fractures above malleoli often comminuted, may need resection if compound, 3—6 months, H.

Fracture at tibio-fibular ligament may occur with sprain; in neglected cases, often leave flat foot.

Fracture of astragalus from falling or jumping often complicated with fractured malleoli and leaving club foot deformity ; may leave severe results, especially anchylosis ; X ray diagnosis important in all injuries of ankle.

Foot and Toes : *Wounds :* neglected, dangerous from sepsis and phlegmon ; scars on soles, bad and may need operation ; special liability to tetanus ; infection may follow trivial wounds.

Contusions : 4—12 ; walking painful ; badly fitting shoes aggravate the condition ; bed and warm applications necessary.

Sprains : in cases of flat foot, very serious ; may take years to heal.

Lacerations : with rupture of tendon and fascia ; the plantar fascia may be tender for months.

Fracture : of os calcis, pain in standing and walking may persist from 2—4 years ; of metatarsal, often interferes with function ; pain after removal of bandages may last for months causing limping and limited use of foot.

Rules for assessing injuries of lower extremity.

(1) Certain occupations especially require steady footing ; if climbing and good balancing necessary, motion must be free.

(2) In other occupations much walking is needed.

(3) In others, prolonged standing. For all these, good restoration of function needed, not merely cure of the injury. It should be noted whether the person can acquire a sedentary occupation and do his work sitting, or if he can only do light indoor work. The p.p.d. in lower extremity is 40—75 per cent. after serious injuries. The actual motion of the joint is to be accurately noted.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Dr. Slawyk. "Zur Statistik der diphtherischen Kehlkopf erkrankungen."—*Charité-Annalen, XXIV Jahrgang.*

A most interesting and instructive report on the results of treatment of the laryngeal complications of 702 cases of diphtheria has appeared under the above title. The great practical importance of this subject is the excuse for giving a lengthened summary of Dr. Slawyk's report. It deals in a most convincing way with the subject, and enables one at a glance to judge of the comparative merits of the serum and non-serum methods of treatment, as well as the usefulness of, and the indications for, the employment of intubation and tracheotomy.

From the first of October, 1894, to the thirty-first of December, 1898, 702 children were treated in the diphtheria department of the Children's Hospital at Berlin, of whom 254 (36.2 per cent.) presented symptoms of laryngeal involvement. It was found that laryngeal complications were more frequent in the winter than in the summer months, the proportion being 40 to 32 per cent. These statistics bear out the generally recognised frequency of laryngeal complications in young children. Fully 50 per cent. of all children admitted under the age of three years had laryngeal complications. The comparative narrowness of the larynx and the difficulty of early recognition of diphtheria in young children, and therefore the late beginning of preventive treatment, accounts, according to Slawyk, for this increased frequency.

The mortality in all the cases diphtheria of the larynx, amounted to 78, being 30.7 per cent. As showing the very great importance of laryngeal diphtheria, 72.2 per cent. of all deaths occurring were due to this complication. Of 254 cases of laryngeal diphtheria, 146 (57.5 per cent.) were operated, while 108 (42.5 per cent.) were not operated. The mortality in the cases not operated on, amounted to 17. The treatment in these cases comprised, besides the serum injection, hot baths

and the internal administration of iodide of sodium and the inhalation of salt solution. Of the 146 cases operated on, 66 (45 per cent.) were boys, and 80 (55 per cent.) were girls. The operations were intubation, tracheotomy, and in a few cases, both were performed.

Intubation was performed in 127 cases, with a mortality of 48 (37.8 per cent.). In 31.5 per cent. of those intubated, tracheotomy was afterwards performed; while in 69 per cent., intubation alone was performed. In the cases where both intubation and tracheotomy were performed, the mortality amounted to 69.2 per cent., while it amounted to 23.9 per cent. in the cases where intubation alone was the operation.

Primary tracheotomy was performed in 19 cases, with a mortality of 68.4 per cent. The statistics bear strong testimony to the severity of laryngeal diphtheria in children under three years. The third and fourth days were found to be the periods during which the greatest danger from laryngeal stenosis existed,

The mortality from the various operations is summarised as follows:—

For intubation alone.....23.9 per cent.
For intubation and secondary tracheotomy.....69.2 per cent.
For primary tracheotomy.....68.4 per cent.

The high death-rate, in the combined operations, is due to the fact that the secondary tracheotomy was only resorted to in cases where intubation failed to relieve, either owing to the low situation of the membrane, or the strength of the patient was inadequate to expel it. Secondary tracheotomy was necessary in 39 cases, chiefly owing to the deficient quantity of air admitted to the lungs in spite of the intubation tube. Recovery followed in 30.7 per cent. of these cases of combined operation.

There was found to be comparatively little difference between the results of primary and secondary tracheotomies. The former was performed on 15 cases; in ten, owing to the age ($1\frac{1}{2}$ years); in two, owing to cardiac weakness; in one, owing to the great swelling of the throat; and in two, from non-stated causes. Six of the 15 children recovered (31.6 per cent.).

An interesting comparison is made between the cases treated since the introduction of serum and intubation and those treated in the ordinary way or where tracheotomy was performed. From the 1st October, 1890, to the 31st March, 1894, there were admitted 415 cases of diphtheria treated by the usual measures in vogue prior to the introduction of the serum treatment. Out of this number, tracheotomy was necessary in 175, or 42 per cent. of the cases. Of 702 cases treated with serum since March, 1894, only 146 were operated on (tracheotomy and intubation), showing the very marked difference of 21.7 per cent. Of

the non-serum cases, 136 died (78 per cent.), while only 61 (41.8 per cent.) of the serum-treated cases died. Had the mortality rate remained the same in the serum as in the non-serum cases 51 more children would have died.

A most telling proof of the usefulness of the serum treatment is shown by the following facts:—Twenty-seven cases of laryngeal diphtheria in the old series, that is in those cases treated before the serum period, required tracheotomy some days after their admission into the hospital, as the following table shows :—

After	3	days'	stay	in	the	hospital..... 4
"	4	"	"	"	"	 10
"	5	"	"	"	"	 5
"	6	"	"	"	"	 2
"	7	"	"	"	"	 1
"	8	"	"	"	"	 2
"	9	"	"	"	"	 1
"	12	"	"	"	"	 1
"	25	"	"	"	"	 1

In no case after admission in the serum-treated cases, did a laryngeal complication requiring an operation set in.

Slawyk does not consider that we have any reliable rules as to the time for interference in stenosis from laryngeal diphtheria. The most trustworthy symptoms likely to call for early interference are, in his opinion, great restlessness; and as a first measure he recommends intubation, except in cases of very young children or where the throat is so engorged as to prevent, practically, the use of the tube.

James Stewart.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

The After-History in Cases of Successful Complete Gastrectomy.

SCHLATTER. "Final Report on Schlatter's Case of Removal of the Stomach." *Medical Record, March 18th, 1899.*

RICHARDSON. "The completed history of a case of total extirpation of the stomach, with remarks upon the surgical treatment of gastric cancer." *Boston Medical and Surgical Journal, September 28th, 1899.*

BRIGHAM. "After-history in a case of successful total extirpation of the stomach." *The Philadelphia Medical Journal, February 3rd, 1900.*

MACDONALD. "Notes on the total removal of the human stomach, and on gastroplication, with a late history of two cases." *The Philadelphia Medical Journal, February 3rd, 1900.*

HARVIE. "Report of a case of recovery after gastrectomy for carcinoma." *Annals of Surgery, March, 1900.*

Carl Schlatter was the first to remove successfully the whole stomach for carcinoma, on September 6th, 1897. The patient was a woman, fifty-six years old, suffering from a diffuse carcinoma of the whole stomach. Up to the beginning of September, 1898, she had been well with the exception of a slight pain now and then in her side and back. Her appetite was good and she took all the food allowed her. From that date she began to suffer from painful sensations in the left hypochondrium after taking solid food. On October 2nd, examination revealed a tumour about the size of a child's head, hard, nodular, and painful on pressure, extending from the middle line into the left hypochondrium and downwards. She did not vomit, but had frequent eructations of a clear yellow fluid. The patient died on October 29th, 1898, one year and nearly two months after the operation. The post-mortem showed masses of cancerous lymph glands in the mesentery, between the liver and the œsophagus, and behind the peritoneum. Cancerous deposits were found in the bronchial and subclavicular glands and in the pulmonary pleura. The autopsy did not confirm the assumption that a dilatation of the œsophagus or intestine had formed a diverticulum in

the digestive tract, taking the place of the stomach. The subdiaphragmatic portion of the œsophagus had a capacity of scarcely one hundred cubic centimetres, and yet the patient had been able to take upwards of three hundred grammes of nourishment at one time without suffering any inconvenience. The only explanation of the ability to take such large quantity of food is that the fluid and softer portion passed at once into the small intestine. The death of the patient was due to the multiple carcinomatous metastases, and could not at all be ascribed to inanition from insufficient nutrition. An entire year had a fifty-seven-year-old woman lived free from suffering without a stomach, and had even gained notably in body weight in that time. Up to within the last week of her life she had been able to go about outside the hospital, but with the appearance of the cachectic symptoms she rapidly succumbed to her malady.

Charles Brooks Brigham reported the second case. The patient was a woman, sixty-six years of age, who had been suffering for a year with pain in the stomach, which with the hardness in the region of the pylorus led to a diagnosis of cancer. The operation was performed on February 24th, 1898. After the removal of the stomach the duodenum was united to the œsophagus without undue tension by means of a Murphy button, $^{15}|_{16}$ inch in diameter. Seven weeks later the patient left the hospital for her home where she has been living ever since. At first, for several months, her meals were at three hour intervals, and she was not restricted to any particular food. As she had few teeth the meat was cut into small pieces. At the present time she takes but three meals daily, with eggnog in the afternoon. She has no indigestion, and her bowel movements are normal, containing no undigested food; her sleep is natural; her skin moist; and her cheeks have considerable colour. In the spring of 1899, she weighed 110 pounds. Her weight at present is 113 pounds. Her blood is practically normal save for a slight diminution of hæmoglobin.

Maurice Howe Richardson performed the third successful operation on May 31st, 1898. The patient was a woman fifty-three years of age, and had suffered from symptoms of cancer for a year. She left the hospital and returned to her home on July 5th. She was able to take sufficient nourishment of great variety, and there was no difficulty in its assimilation; she was free from the distress that she used to experience after taking food, but there was in the epigastrium a sensation of drawing or dragging more or less pronounced, as if there was undue tension in front. Careful examinations were made from time to time to detect any evidence of recurring disease, but they were always negative. In November, 1898, the wound unexpectedly reopened, after

some pain and discomfort in the left hypochondrium. Shortly afterwards symptoms of intestinal obstruction began to appear and her strength failed with alarming rapidity and she died on February 19th, 1899. At the autopsy it was found that the mass at the left of the epigastrium was recurrent cancer, which had infiltrated the peritoneum under the rectus and had spread about the walls of the small intestines. There were nodular masses in the mesentery of both large and small intestines. Minute nodules were scattered everywhere. Near the splenic flexure the lumen of the colon was totally obstructed. Beyond this point the bowel was collapsed, above it was enormously distended. The line of suture was perfect except for a sinus about the size of the little finger. From the history of this case the author concludes, that the patient's health would have been fully re-established had there been no recurrence of the original disease, that the sufferings were due to the mechanical effects of a chronic obstruction rather than to cancer itself, and that œsophago-duodenostomy is technically possible in a certain percentage of cases.

G. Childs Macdonald reported the fourth case. The patient was a man, thirty-eight years of age, who had been suffering from symptoms of gastric cancer for over a year. The operation was performed in September, 1898. The man is now well and living at Pasadena, Cal., where he follows the usual hard life of a farm labourer, eating and drinking the common food, partaking of meat and vegetables and red wine, and he is able to digest it all and do a good day's work, although he has no stomach.

John Bruce Harvey, (a graduate of McGill '91) has recently recorded a fifth case, having performed the operation on May 15th, 1899. The patient was a woman, forty-six years of age, who had suffered for nearly eighteen months from symptoms referable to the stomach, and for some time a mass was observed in the epigrastrium. The stomach was removed with great difficulty owing to its attachment to the surrounding parts. The duodenum was without much difficulty brought in apposition with the œsophagus, and after the parts were secured with catgut, a final row of Lembert's sutures completed the operation. The patient made an excellent recovery, and left the hospital on June 25th, after partaking of a dinner consisting of roast beef, mashed potatoes, one glass of milk, ice cream, and a small cup of coffee. Her appearance was one of happiness, and her feelings those of perfect comfort, every vestige of stomach distress having vanished. The only inconvenience she spoke of was a sense of pulling in the epigastrium, when she lay perfectly flat on her back, with her legs straightened out. On returning to her home she immediately assumed the responsibility of her household work, attending to all its details except washing.

Summary of the cases :—

1. Woman, aged 56, died 14 months after operation.
2. Woman, aged 66, alive and well 2 years after operation.
3. Woman, aged 53, died 9 months after operation.
4. Man, aged 38, alive and well 17 months after operation.
5. Woman, aged 46, alive and well 10 months after operation.

These cases clearly show that the stomach, although a convenience is not an absolute necessity, and can be removed in its entirety without apparently causing any interference with nutrition. In suitable cases the operation is quite justifiable, it relieves the patient of the intense distress and suffering, and offers a reasonable expectation of prolonging life, for many months. To be of any avail the operation must be performed at the earliest moment upon patients whose hearts are in good condition and whose general strength is but little impaired, and in whom the disease itself is situated favourably for wide and thorough dissection.

Fracture of the Humerus, with Paralysis of the Musculo-Spiral Nerve.

Dr. B. Farquhar Curtis presented before the New York Surgical Society (*Annals of Surgery, February, 1900*), a lad sixteen years old, who, in December, 1898, sustained a fracture of the humerus in its middle portion, together with a fracture of the forearm. The fractured humerus united, but complete musculo-spiral paralysis followed. He had a condition of complete wrist-drop, with extensive atrophy of the muscles of the forearm and hand. On March 7th, an incision was made over the humerus over the point of fracture, and the nerve was found to be continuous, but displaced by the fragments, which were fairly well aligned, although there was some overriding. At the upper end of the lower fragment the nerve was caught so that it was carried up and passed at almost right angles across the back of the humerus. This had resulted in stretching the nerve, and a cicatrix had formed about it, so that it was closely bound down to the bone, and its diameter had become reduced to about one-third its normal size for a distance of about three inches. The nerve was freed from the cicatricial tissue with some difficulty. The wound healed by primary union, but no improvement was noticed in the function of the arm until July. From that time steady improvement had occurred, and when the boy was shown almost full power in the arm and hand had been regained.

Dr. G. Riethus (Leipzig) discusses this lesion in *Beitrage zur klinischen Chirurgie*, Band xxiv, Haft 3. (Reviewed in *Annals of Surgery, January, 1900*). In the clinic at Leipzig, from 1860 to 1898, amongst 319 cases of fractures of the humerus, seventeen cases of mus-

culo-spiral paralysis were met with, and in nine instances the fracture was situated at the middle of the humerus. In comparison, the statistics of Bruns offer a collection of 866 fractures of the humerus, with seventy-three paralyses, and associated with fracture of the mid-humerus in more than fifty per cent. of the cases. Aside from the location of the fracture the nature of the violence is accountable for nerve injury, and both primary and secondary musculo-spiral paralysis ensue when the violence is not merely spent in causing fractures, but aids in the dislocation of the fragments, therefore, torsion fractures and fractures with great displacement are more frequently met with in musculo-spiral paralysis. Nerve palsies may be either primary or secondary. The former occur immediately after the injury, and the latter at remote periods. In the first instance the continuity of the nerve may be intact, its fibres merely contused and lacerated in part by the fragments or compressed between the fragments, or the continuity of the nerve may be completely severed. The motor paralysis, as a rule, is a typical wrist-drop, the sensory disturbances are very variable. The exact diagnosis of the nerve injury is impossible, as all degrees of injury may provoke the same symptoms, yet with great displacements of the fragments and writ-drop contusion may be assumed, and if in addition there are great sensory disturbances a complete severance of the nerve is most likely.

Treatment should at first be expectant; but if the paralysis is progressive, or if at the time of union it is stationary, operation is to be resorted to. Immediate nerve suture must be performed if the diagnosis of severed nerve is made. Secondary palsies are due to compression of the nerve by the callus against the shaft, or included in the callus, or stretched out over it, in consequence of which the disturbances set in later than in the primary palsies. There may be a combination, the first due to contusion, the subsequent due to compression. Motor and sensory disturbances set in simultaneously in the secondary paralyses. As secondary paralyses never occur spontaneously, operation is always indicated, and, as the onset of the paralysis is so insidious, operation should be timed early, yet late interference may prove beneficient.

Kenneth Cameron.

Ophthalmology.

UNDER THE CHARGE OF J. W. STIRLING.

Intraocular Injections.

KNAPP. "Injections of Weak, Sterile, Salt Solutions into Collapsed Eyes." *Archives of Ophthalmology, Vol. XXVIII., page 308.*

FUGE. "Antiseptic Injections into the Anterior Chamber." *Archives d'Ophthalmologie, July, 1899.*

DARIER. "Painless Subconjunctival Injections of the Mercury Salts." *Die Ophthalmologische Klinik, August, 1899.*

Knapp mentions three cases in which he very successfully used an injection of sterile, salt solution and the following are his conclusions.

(1) When, from lack of vitality in old age or any other cause, the cornea sinks in so that the eye collapses in such a way as to prevent the wound in cataract extraction from closing exactly, a liquid should be injected until the globe has resumed its shape, and the lips of the wound apply correctly.

(2) Not only remnants of cataract, but also cholesterine and other heterogenous substances including perhaps some movable foreign bodies, may be syringed out of the eye with impunity and success.

(3) When, during the extraction of a complicated cataract, the fluid vitreous escapes in such a quantity that the eyeball collapses, either totally or in such a degree as to prevent the closure of the wound, liquid should be injected to refill the globe and make the wound close.

(4) When, from an operation or an injury, the eye collapses, injection of a sterilised, indifferent liquid may restore the shape of the globe, facilitate the closure of the wound, and ward off infection from the entrance of conjunctival secretion into the eye.

Fuge conducted his experiments on human and rabbit's eyes, and considers that the main indications for intra-ocular injections are those diseases characterised by the appearance of hypopyon and infectious irido-choroiditis. If the hypopyon be very large or if there be post-operative suppuration with beginning panophthalmitis, the antiseptic douching of the anterior chamber gives very good results. A counter opening assists the drainage and cleansing in many cases. Fuge uses solutions of boric acid and cyanide of mercury.

The drawback to subconjunctival injection is the intense pain experienced, which cocaine and orthoform are incapable of allaying.

Darier finds that acoin is a capital anæsthetic for this purpose, using hydrarg cyanid, 0.01; sodi chlori, 1.00; aquæ distill, 50.00; and to this adding a drop of a one per cent. solution of acoin.

Epileptic Eye Strain.

Capps. "Epileptic Eye Strain." *New York Medical Journal, September 16, 1899.*

Capps considers that the continued effort which is put on the nerves of the accommodation, in course of time, sets up a reflex condition of the sympathetic nervous system that produces the epileptic paroxysm, just as it does in other parts of the body. Some cases of correction of refractive errors with resulting freedom from epilepsy are quoted.

Optic Atrophy following Profuse Hæmorrhage.

Editorial in the *Medical Record, September 9, 1899.*

Fernando. "Optic Atrophy following Profuse Hæmorrhage. *Annales de Oftalmologia, September, 1899.*

The article in the *Medical Record* is based on a case of Theobald's published in the Johns Hopkins Hospital Reports, Vol. X., No. 98, and also on a review of the literature bearing on this subject. The inferences drawn are :—

(1) The ophthalmoscopic examination, as a rule, points to thrombosis of the central retinal artery as the cause of blindness.

(2) The resistance to the already enfeebled blood current in the central artery by the intra-ocular tension is an important factor.

(3) Exceptionally, the thrombosis occurs in the retinal vein and not in the artery.

(4) In other exceptional cases the blindness is due to hæmorrhage or serous effusion in the sheath of the optic nerve or the optic nerve itself; and here the damming back of the blood current by the intra-ocular tension is likely of much importance.

Fernando reports a typical case of a man, aged 45, who, after bloody vomit and stools was unconscious for five days. On recovering consciousness he was found to be totally blind. Examination showed dilated pupils and optic atrophy, but no hæmorrhages in the fundus.

Connection between Ocular and Nasal Affections.

De Lapersonne. "Connection between Ocular and Nasal Affections." *Annales d'Oculistique, September, 1899.*

Heilmaier. *Zeitschrift für Augenheilkunde, December, 1899.*

De Lapersonne gives the histories of three very interesting cases. In each there was monocular optic neurtiis with stasis in the papillary ves-

sels. In one case there was sarcoma of the sphenoidal sinus, in another, infectious posterior rhinitis in which the sphenoid shared, and in the third case, purulent posterior rhinitis also implicating the sphenoid. Operation on these nasal conditions produced no improvement of the neuritis which progressed steadily to optic atrophy. Kaplan's symptoms of neuralgia, photophobia, lachrymation, blepharospasm, and erysipelatous redness of the root of the nose, were wanting. The involvement of the optic nerve was due to the close connection between the sphenoidal sinus, on the one hand, and the optic canal and upper part of the intraorbital portion of the optic nerve, on the other.

Heilmaier found in thirteen hundred cases that in only sixty-four was the nasal mucous membrane in a normal condition. In disease of the tear passages, nasal trouble was almost always present, generally rhinitis atrophica fœtida. Eczematous affections of the eye are almost invariably associated with similar conditions in the nose. Catarrhal conjunctivitis is frequently caused by disease of the nasal mucous membrane. Serpiginous ulcer of the cornea is attended essentially by those nasal affections which are most frequently associated with blenorrhœa of the lachrymal sac.

Acoin ; A New Local Anæsthetic.

Randolph. "Acoin : A New Local Anæsthetic." *Ophthalmological Record, August, 1899.*

Brudenall Carter. *Lancet, October 21, 1899.*

Darier. *Die Ophthal. Record, August 5, 1899.*

Randolph. *Transactions Amer. Ophthal. Society, 1899.*

Acoin is a new anæthetic which, so far, seems to have a very limited application in eye diseases, as will be inferred from the results obtained by the authors of these three papers.

Darier and Carter found its main use in rendering painless the subconjuctival injection of cyanide of mercury, where both cocaine and orthoform failed.

Randolph's conclusions are valuable in regard to its general usefulness in ocular therapeutics. Acoin is a white powder easily soluble in water in the proportion of one per cent., it is derived from guanin and is allied to caffeine and theobromine.

(1) Acoin, in the proportion of 1 to 100 and 1 to 300, causes satisfactory anæsthesia in an *unirritated* eye in about the same length of time as cocaine.

(2) In more than one case, where the eye was congested, repeated instillations of acoin were incapable of producing satisfactory anæsthesia.

(3) No defects of the corneal epithelium were observed after its use.

(4) Acoin has no effect upon the accommodation.

(5) It has no effect on the size of the pupil.

(6) It does not increase the intra-ocular tension.

(7) The staphylococcus pyogenes albus did not grow in agar which contained acoin in the proportion of 1 to 100 or 1 to 300, and furthermore, the exposure of this organism for twenty-four hours to the action of acoin, resulted in its death. Acoin would thus seem not only to inhibit the growth of this germ but also to destroy it.

Anæsthesia lasted 15 minutes with a solution of 1 to 1000.
" " 30 " " " " 1 " 400.
" " 60 " " " " 1 " 200.
" " 40 to 80 " " " " 1 " 100.
" " over a day " " " 1 " 40.

Protargal.

ENGELMANN. "Protargol." *Centralblatt f. Gynækologie, November 9, 1899.*

PRAUN. *Centralblatt f. Augenheilkunde, June, 1899.*

Engelmann uses a 20 per cent. solution of protargol in ophthalmia of the new-born with great success, and professes to obtain far more favourable results than with nitrate of silver. He much prefers it to the use of nitrate of silver in the Credé method, there being little or no reaction; and in the few cases in which secretion was increased it disappeared after a day or two.

Praun finds the action of protargol specially marked in all cases where there is much secretion, and exceeding nitrate of silver in the speed of its curative action. In cases with little or no secretion its action fails.

Praun uses a 10 per cent. solution in dacryocystitis and conjunctivitis syringing it into the sac or dropping it into the eye. If there is much swelling of the lids, a poultice of gauze pads dipped in protargol, may be applied.

Corneal Ulcers.

JOHNSON. "Nitric Acid as a Cautery in Corneal Ulcers." *Amer. Jour. of Ophthalmology, July, 1899.*

BOURGEOIS. "Treatment of Infectious Ulcers of Cornea." *Annales d'Oculistique, July, 1899.*

Johnson uses 9 to 15 per cent. solution of chemically pure nitric acid applied to the infiltrated ulcer by a fine grained, soft-wood stick, whittled to an appropriate shape. He holds that he hereby avoids the scar

caused by the use of the actual cautery or nitrate of silver. He applies the acid until the whitening of the tissues shows that the tissue is destroyed, and then washes the eye with water or a saline solution.

Bourgeois inveighs against the too frequent and rough tampering with the cornea in infectious ulcers. He pays especial attention to the lachrymal sac and duct, getting these thoroughly aseptic, cauterising them if necessary, and cleansing with cyanide of mercury, 1 to 1000 or 1 to 2000. He cleanses the ulcer with concentrated boracic acid and then cauterises it with the actual cautery or hot air blast. If there be pus in the anterior chamber and it only occupy one-fourth of this space, leave it alone; if it increase, paracentese the chamber and then wash it out with a salt solution of a strength of one and one-fifteen-hundreth parts of salt to ninety-eight parts of water, the solution being heated to the temperature of the body. Iodoform is now dusted in and the eyelids closed.

J. W. Stirling.

Reviews and Notices of Books.

Notes on the Modern Treatment of Fractures. By John B. Roberts, A.M., M.D. Professor of Surgery in the Philadelphia Polyclinic, Mütter Lecturer on Surgical Pathology of the College of Physicians of Philadelphia. With thirty-nine illustrations. New York, D. Appleton and Company, 1899.

This little volume is a collection of essays contributed to the medical press by the author at various times during the past few years. He disapproves of a blind reliance upon therapeutic dogmas and the adoption of routine measures, and enters a strong plea for the exercise of more simplicity and more common sense in the treatment of fractures. He applies all the methods of modern aseptic treatment to this branch of surgery. To obtain complete reduction and exact restitution of contour he advocates, when necessary, skiagraphy, exploratory incision, tenotomy, and subcutaneous nailing, and clearly defines the indications for each operation. A large portion of the book is taken up with the consideration of the fractures of the lower end of the radius, and it contains the most valuable suggestions, as the author has given a very great deal of thought and study to this subject. His treatment of these lesions consists in complete reduction. Little else is required in the ordinary cases. A roller bandage or a strip of adhesive plaster applied to the wrist in a circular manner is all that is necessary, except in unusually complicated fractures. All ordinary forms of splints should, as a rule, be discarded as useless, needless, or dangerous. The book is an extremely valuable addition to the surgeons' library, the style is vigorous and the language plain, and all who read it will do so with interest and profit.

K. C.

A Manual of the Diagnosis and Treatment of Diseases of the Eye. By Edward Jackson, A.M., M.D. With 170 illustrations and two coloured plates. Philadelphia, W. B. Saunders, 1900. Price $2.50.

Dr. Jackson has written a book which is far above the ordinary stamp of manuals on eye diseases, now appearing so frequently. The author shows a thorough appreciation of the practical points a student is so much in need of, and brings them out clearly without unnecessary verbiage. Nevertheless, it strikes one that in several places this useful condensation has been carried almost too far. This seems really the only fault to be found in an otherwise excellent little work. A chapter on remedies and their application is a thoroughly useful and practical innovation.

J. W. S.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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VOL. XXIX APRIL, 1900. NO. 4.

THE PRESENT SMALL-POX EPIDEMIC.

The epidemic at present existing in the Lower St. Lawrence presents some very striking features. Although nearly 500 cases in all have occurred, there have only been two deaths; and of these one occurred through a complication probably not connected with the disease, and the other was in a very debilitated subject.

The degree of infectiousness seems to be very high; and the fact that the patients for the most part are only slightly ill, makes it unusually difficult to ensure isolation. It has usually been found relatively easy to eradicate the disease from country districts owing to the greater facilities for enforcing isolation, but in the present case infection seems to have twice occurred from cases on the border of New Brunswick. Fortunately, the disease has not spread in our larger cities.

The extreme mildness is characteristic of the type of small-pox which has been so abundant in the Middle West of this continent for two or three years past, and has been the despair of the State Boards of Health. The condition has been carefully studied by experts in various parts of the continent and pronounced to be undoubtedly small-pox though of the varioloid type. It is noticeable that secondary fever rarely occurs and that the pustules dry up more rapidly than in the typical form.

The eruption, however, passes through the classic types of papule, vesicle, pustule and crust, and shows umbilication and, occasionally, hæmorrhagic infiltration.

The diagnosis from chicken-pox is rendered unusually difficult from the fact that the pocks may appear in successive crops and frequently appear on the back. Hence, it is unusually difficult to recognize with certainty the first case. The disease does not attack vaccinated persons, and is rapidly got rid of by the ordinary measures of disinfection and isolation.

As the chief centre of the disease is in districts which profit largely by summer visitors and tourist travel, we hope that the municipalities concerned will co-operate heartily with the Provincial Board of Health, which has the matter in hand.

The most probable explanation which has been given of the mild character of the cases, is that diseases was imported from Cuba at the close of the Spanish-American war, where a very mild type of small-pox has been known to exist for many years past, whereas a widespread epidemic outbreak of varioloid has been practically unknown in America during the past 40 years.

The following comprise the Medical Staff of the recently opened Home for Incurables at St. John, N.B. Consulting Physician-Surgeons: Drs. Wm. Bayard, Boyle Travers, John Berryman, James Christie, P. R. Inches, and H. G. Addy. Visiting Physician-Surgeons: Drs. W. F. Roberts, F. W. Daniel, Murray McLaren, T. D. Walker, and S. S. Skinner. Oculist: Dr. John H. Morrison. Dermatologist: Dr. Melton. Pathologist: Dr. W. L. Ellis.

At a recent meeting of the Board of Governors of McGill University, the following appointments were made in the Faculty of Medicine:—

Dr. Wyatt Johnston, Assistant Professor of Hygiene.
Dr. J. M. Elder, Lecturer in Surgery and Clinical Surgery.
Dr. D. J. Evans, Lecturer in Obstetrics.
Dr. J. A. Hutchison, Lecturer in Clinical Surgery.
Dr. J. G. McCarthy, Lecturer in Anatomy.
Dr. A. G. Nicholls, Lecturer in Pathology.
Dr. J. W. Stirling, Lecturer in Ophthalmology.

The Annual Meeting of the American Medico-Psychological Association will be held at Richmond, Va., under the presidency of Joseph G. Rogers, M.D., of Logansport, Ind. Upwards of thirty papers have

already been secured, and the meeting promises to be a very successful one. The Executive Committee has secured the Jefferson Hotel for the accommodation of members, and the meetings will be held in the hotel building.

The Annual Meeting of the Canadian Medical Association is to be held in Ottawa on the 12th, 13th, and 14th of September, 1900. Mr. Edmund Owen, of London, England, has consented to deliver the address in Surgery, which will add greatly to the attractions of the meeting. At a largely attended meeting of the profession in Ottawa, it was unanimously decided to endeavour to make the closing session of the Association for this century the most successful in its history, and a large sum of money was subscribed by those present for incidental expenses. Under the presidency of Dr. R. W. Powell, of Ottawa, a meeting in the Capital of the Dominion is sure to be a great success both professionally and socially.

The March number of the *University Medical Magazine* appears under new auspices. The Board of Trustees of the University of Pennsylvania has now obtained entire control of the journal, and it is henceforth to be the official organ of Department of Medicine, and to be edited by Charles H. Frazier, M.D., with the collaboration of the Faculty of Medicine. The contents will consist of original articles and clinical reports of cases, the transactions of the University of Pennsylvania Medical Society, and a department of recent literature. Readers will be kept fully informed concerning the work that is being done in the clinics, the laboratories, and the hospitals, by members of the Teaching and Hospital Staffs of the University.

Mr. William Johnson, of Liverpool, has founded a Research Fellowship in Bacteriology of University College, Liverpool, to be known as the "*Colonial Fellowship,*" and open to Advanced Students of the Colonial Universities.

The Fellowship is of the value of £100 per annum, but if the Reseacher shows great promise a second year will be entertained. The work is to be done in the Thompson Yates Laboratories of the School of Pathology under Professor Robert Boyce, who is now ready to receive applications.

It is hoped that the founding of this Fellowship will be the first step towards a closer union between the Colonial and English Universities. It is intended as far as possible to take the Universities in rotation, and we understand that should a good man apply McGill would likely be

given first chance. McGill graduates should apply through Dr. Adami, Professor of Pathology at the University.

The following is the list of graduates at Queen's University in Medicine for 1900: D. M. A. Allison, Adolphustown; T. J. Barnet, Clayton; D. B. Bridge, Westbrook; S. Burton, Kingston; R. F. Carmichael, Strange, Ont.; E. W. Donnell, Cataraqui; J. W. Edwards, Kingston; C. C. Ferrier, Kingston; W. A. Hall, Kingston; F. R. Hastings, Kingston; R. C. Hiscock, Kingston; C. P. Johns, B.A., Kingston; T. H. Johnston, Drayton; A. McConville, Kingston; R. D. W. Parker, Bermuda; S. E. Porter, Lindsay; W. S. Broderick, Ottawa; T. F. O'Hagan, Fort William; W. J. Ross, Martintown; S. M. Smith, Kingston; T. A. Wilson, Kamloops, B.C. Prize-winners, recommended for house surgeons: T. H. Johnston, B. B. Bridge, R. C. Hiscock, C. P. Johns, R. F. Carmichael. *Medal for Surgery:* T. H. Johnston, of Drayton, with the honor of medal in medicine. *Medal in Medicine:* B. B. Bridge. Faculty Prize of $25 for the best examination in Anatomy, Physiology and Chemistry: T. O. MacLaren, of Lancaster. Dr. Hayunga's prize for the best examination in Materia Medica, $10 in books, G. F. Dalton, B.A., Kingston.

NEW BOOKS, ETC., RECEIVED AND NOTED.

W. B. Saunders, Philadelphia.

A Manual of the Practice of Medicine prepared especially for students. By A. A. Stevens, M.D., 1898.

A Text-Book on Diseases of Women. By Charles B. Penrose, M.D., Ph.D., Third Edition, 1900.

The American Year-Book of Medicine and Surgery. Under the general editorial charge of George M. Gould, M.D. Medicine, 1900.

The American Year-Book of Medicine and Surgery. Under the general editorial charge of George M. Gould, M.D. Surgery, 1900.

Elements of Clinical Bacteriology. By Dr. Ernst Levy and Dr. Felix Klemperer. Second Enlarged and Revised Edition. Authorised Translation by Augustus A. Eshner, M.D., 1900.

Saunders' Question Compends. Essentials of Surgery. By Edward Martin, A.M., M.D. Seventh Edition, Revised and Enlarged, 1900.

The F. A. Davis Company, Philadelphia, New York and Chicago.

Diseases of the Nose and Throat. By J. Price-Brown, M.B., L.R.C.P.E., 1900.

The Anatomy of the Brain. By Richard H. Whitehead, M.D., 1900.

Injuries to the Eye in their Medico-Legal Aspect. By S. Beaudry, M.D. Translated from the original by Alfred James Ostheimer, M.D. Revised and Edited by Charles A. Oliver, A.M., M.D. With an Adaption of the Medico-Legal Chapter to the Courts of the United States of America by Charles Sinkler, Esq., 1900.

Lea Brothers & Company, Philadelphia and New York.

The Principles of Treatment and their Applications in Practical Medicine. By J. Mitchell Bruce, M.A., M.D., F.R.C.P. Adapted to the United States Pharmacopœia by E. Quinn, Thornton, M.D., 1900.

A Practical Treatise on Diseases of the Skin for the use of Students and Practitioners. By James Nevins Hyde, A.M., M.D., and Frank Hugh Montgomery, M.D. Fifth Edition, 1900.

Lea's Series of Pocket Text-Books. Nervous and Mental Diseases. A Manual for Students and Practitioners. By Charles S. Potts, M.D. Edited by Bern B. Gallaudet, M.D.

Progressive Medicine, Edited by Hobart Amory Hare, M.D., Assisted by Charles Adams Holder, M.D. Volume I., March, 1900.

Longmans, Green & Company, London, New York and Bombay.

A Manual of Pathology. By Joseph Coats, M.D., late Professor of Pathology in the University of Glasgow. Fourth Edition, revised throughout by Lewis R. Sutherland, M.B., 1900.

H. K. Lewis, London.

Anæsthetics: Their Uses and Administration. By Dudley Buxton, M.D., B.S. Third Edition, 1900.

P. Blakiston's Son & Company, Philadelphia.

A Pocket Medical Dictionary. By Geofge M. Gould, A.M., M.D., 1800.

E. B. Treat & Company, New York and Chicago.

The International Medical Annual and Practitioners' Index. Eighteenth Year. 1900.

Medical and Surgical "Review of Reviews," Limited, London.

The Medical Review. Edited by Nathan E. Boyd, M.D. Vol. II., January to December, 1899.

Reprints, Reports, Transactions, etc.

Transactions of the College of Physicians of Philadelphia. Third Series, Vol. XXI., 1899.

Transactions of the Literary and Historical Society of Quebec, No. 22. Sessions of 1892 to 1898. 1898.

The Justo—Major Pelvis as a Factor in the Causation of Perineal Injuries. By Joseph Brown Cooke, M.D. The Medical News, February 10, 1900.

Foreign Bodies in the Maxillary Sinuses. R. J. Wenner, M.D. Cleveland Journal of Medicine, March, 1900.

Recent Methods in Cardiac Therapeutics by Baths and Exercises. By Thomas E. Satterthwaite, M.D. The Medical News, March 10, 1900.

Reprints on the Treatment of Stricture, etc., etc. By G. W. Overhall, M.D.

Some Casual Remarks on Prostitution and Venereal Diseases in their Relation to the Public. By Isador Dyer, Ph.B. (Yale), M.D. Philadelphia Medical Journal, February 10, 1900.

Stricture of the Œsophagus and Electrolysis by a New Œsophageal Electrode. By Charles D. Aaron, M.D. The Physician and Surgeon, November, 1899.

Imperfect or Deficient Urinary Excretions as Observed in Connection with Certain Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. Transactions of the American Dermatological Association, 1899.

The Diagnosis of Gastric Ulcer, with Report of Cases. By Frank H. Murdock, M.D. The Philadelphia Medical Journal, 1900.

A Preliminary Investigation of the Theory of the Inoculation of Malarial Fever through the Agency of Mosquitoes, with Anatomy of Musquitoes. By Albert T. Waldert, M.D. The Journal of the American Medical Association, January 6, 1900.

La Pratique des Accouchements, obstetrique journalière. Par F. J. Herrgott. Annales de Gynæcologie et d'Obstetrique, janvier, 1900.

Some Practical Remarks on the Anatomy of the Temporal Bone, with Demonstrations. By Emil Amberg, M.D. The Physician and Surgeon, November, 1899.

Alcoholic Gastritis. By J. A. Hofmeimer, M.D. The Medical Mirror, 1899.

Sterility and Pelvic Deformity. By Joseph Brown Cooke, M.D. The Medical and Surgical Monitor, February 5, 1900.

The Diagnosis of Nervous Syphilis. By Charles W. Burr, M.D. University Medical Magazine, July, 1898.

Medical Education. By Charles W. Burr, M.D. The Philadelphia Medical Journal, October 21, 1899.

A Case of Cerebral Hæmorrhagic Pachymeningitis with Pseudo-Bulbar Palsy. By Charles W. Burr, M.D., and D. J. McCarthy, M.D. Journal of Nervous and Mental Diseases, October, 1899.

Some considerations in Sugar-Testing, with Description of a Method for the Detection and Estimation of Sugar in Urine. By Arthur R. Elliott, M.D. Medicine, January, 1900.

Les Aliens devant la Loi. Etude Medico-Légale. Par Dr. Geo. Villeneuve, 1900.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXIX. MAY, 1900. No. 5.

Original Communications.

THE HEART IN RELATION TO LIFE INSURANCE.

BY

GEORGE WILKINS, M.D.,

Professor of Medical Jurisprudence and Lecturer on Histology, McGill University; Consulting Physician to the Montreal General Hospital; Medical Director of the Sun Life Insurance Company.

The subject of to-night's discussion, although given as "Heart Disease in Relation to Life Insurance," I take it for granted to include, not only diseased conditions of the heart, but also abnormal ones which may exist apart from disease of the organ itself.

Included in this general heading we have to consider:—(1) Heart sounds. (2) Rhythm. (3) The condition of the muscular substance of the heart itself. (4) Those diseases of the organ that may exist without evidences on physical examination.

It is not my intention to enter into a detailed history of heart disease, I shall refer only in a general way to the more common general conditions of that organ that are met with in Life Insurance. Now, although murmurs are what most attract the attention of the medical examiner, I am afraid that the more important question as to the condition of the ventricular wall and the blood vessels is too often overlooked. Undoubtedly the most frequently occurring of all cardiac lesions met with by the examiner is that of mitral regurgitant murmur. In former years, not so very long ago, it was considered a very serious affection, and one felt inclined to regard with feelings of great sympathy any individual who was so unfortunate as to possess a murmur indicating the condition of the valves that permitted of this reflux. When in addition to the abnormal murmur, the heart was found to be hypertrophied, our fears were increased manifold. Thanks to the growing popularity of life insurance and the necessarily more frequent examination of apparently healthy individuals, the presence of these murmurs is found to be quite consistent with perfect health. Further it is found that those to whom

the discovery of the presence of a murmur has been a revelation—those who have experienced no discomfort or inconvenience of any kind in their ordinary avocations—very often have a hypertrophied heart. We now know that the hypertrophy in many of these cases is a healthy condition and one that makes compensation for the leaky state of the valves. We feel satisfied that so long as that compensation exists the danger of death from "failure" is averted. If this abnormal state of the heart is found in an apparently healthy young man in whom development is not yet complete, the chances are very strong in favour of his reaching the expectation of his life so far as his heart is concerned. When, however, the lesion is the result of disease past middle life the hypertrophy may be absent or of short duration, and there is greater danger of the ventricular power failing with its attendant consequences. It is this failing power we have to fear in these cases. In cases such as these we ought especially to take into account the mode of life, as that undoubtedly has a direct bearing on the heart overcoming and continuing to do so the increased strain put upon it by the leaky valves. An individual accustomed to a quiet easy life with plenty of fresh air has much better chances than one more actively engaged and subject to mental worry and excitement. The free use of tobacco or of alcohol unquestionably increases the danger in these cases. Another point that must have a great deal to do with the comfort of these heart cases is the quantity of food that is taken. That, however, is a question more for the consulting physician than for the medical examiner for life insurance. Although important, the latter cannot question the applicant in that direction as I fear he might consider it impertinent and of no bearing on his case.

Sir William Broadbent says "lots of people develop a mitral murmur about fifty who live to seventy and upwards."

Now with regard to aortic murmurs, in considering their importance we must take into consideration our clinical experience. Whilst aortic regurgitant murmurs as a rule have a very uncertain future about them, the obstructive murmur is much less to be dreaded. When we take into consideration the fact that about one-third of these latter cases are of rheumatic origin, and when due to acute rheumatic fever occur most frequently in the young, we are confident that we are likely to have a compensating hypertrophy that will probably permit of a long life. Then again many of these cases may not have any increased resistance in the way of stenosis to overcome or it may be extremely slight and the murmur due solely to the presence of vegetations producing slight roughening of the valves.

Quite otherwise is it with the regurgitant aortic murmur whether associated or not with abnormal first sound. We know well that the nutrition of the heart must suffer from imperfect supply of blood through

the coronary arteries and in consequence the organ fail to do its work, and very often without secondary warnings of its failing power. These are the cases which we most frequently hear of in connection with sudden death and consequently to be avoided by insurance companies.

Allbutt has pointed out the liability to disease of the aorta and its valves with changes in the muscular substance of the heart itself amongst persons engaged in occupations requiring severe, sustained and oft-repeated muscular efforts in which all the muscles of the body are simultaneously engaged. The tension gives rise to a slow process of disorganisation leading to inadequacy of the aortic valves and occasionally, it has been supposed, to atheroma of the aorta itself and sometimes to aneurism. The aortic valves we know are frequently found affected in soldiers who are obliged to make forced and long marches. Similar conditions are also occasionally found in young men undergoing severe athletic strain as required in training for boat races and the like. We have also to bear in mind the possibility of syphilis being the direct cause of aortic murmurs. We know that it is a very frequent cause of aortic aneurism, and may thus at times account for a murmur heard in this region. I consider it therefore of importance that the possibility of applicants ever having had syphilis should be enquired into and noted accordingly.

Another important bearing in heart disease at times is the cause of death of other members of the family. Where we meet with two or more members of the family dying of cerebral apoplexy or Bright's disease and there are present in applicant any symptoms that would lead us to suspect sclerotic changes in the vessels, even in the absence of a murmur or signs of hypertrophy, it would be our duty to treat the case as an impaired life. I do not think that we know sufficient of the cause of heredity to altogether estimate a something indefinite that has been transmitted—whether it is a soil that allows of the easy development of gout from causes less effectual in other subjects. This may be simply a theory, but the experience of insurance companies is that with such histories they have more death claims to pay in which the cause of death has a direct bearing on such a family history.

Whilst the adventitious heart sounds to which I have referred are due entirely to endocardial abnormality, it is not improbable that some of them may be altogether exocardial. This question was raised by Sir William Gairdner at the British Medical Association in 1898. He quotes his experience in the post-mortem room in cases where heart disease was not the cause of death which showed the presence of patches in the pericardium, which we also have occasionally observed, and which he believes must have caused a murmur of some kind during life. If we were able positively to diagnose these conditions during life they would be no bar

to life insurance so far as the heart is concerned. On the strength of these observations in common with some other authorities, he maintains that it is not necessary for a pericarditis, in the case of a patient who completely recovers, to terminate in adhesions. The question is certainly one well worthy of consideration by the life insurance medical examiner, but is one which I am afraid requires the assistance of the hospital clinician, and later on of the pathologist, to decide absolutely. In the absence of these authorities and the presence of a murmur, the medical examiner will best serve the interests of his company in giving the latter the benefit of any doubt that may exist in his mind, and in looking upon it as of more serious importance.

With regard to functional murmurs, those that are associated with fevers, as with certain forms of intoxication, are not likely to come under the observation of the medical examiner; but there are many others in which it is very often a difficult matter to decide positively whether the abnormal sound is of this character or not. Of course a very large majority of such sounds are easily recognised—the general appearance of the individual, the locality of the murmur as well as its character, and various other symptoms that are present, at once decides the question. But numerous cases must occur in the practice of every physician in which grave doubts are present as to the actual character or cause of the abnormal sound. Some of these murmurs heard over the mitral area are not constantly present and are influenced by respiration. The question arises : Are these murmurs due to some derangement of the nervous control of the heart affecting possibly the papillary muscles, or may they not be accounted for by some condition of the pericardium as that just referred to ?

A question that occasionally arises is: Is it possible for an organic murmur to disappear? I think it is. I am sure that I have had cases in my practice of undoubted organic murmurs that have disappeared, and again others that have been very much modified ; loud harsh murmurs that have become soft and almost inaudible. Of course this fact does not necessarily imply that in consequence they have become less serious, but it is quite possible it may be so. The question is really a serious one from an insurance point of view. I am sure in my experience as medical director of an insurance company I must, in probably two or three hundred cases, have received reports from medical examiners saying heart sounds are perfectly normal, and subsequently, through the central bureau at Boston, have received information that the same cases had been declined by other companies because their examiner had reported mitral regurgitation or other murmur. All companies have similar experience.

Before a policy is issued in these cases I invariably write our examiner,

notifying him of the previous discovery of a heart murmur by another, and asking him to re-examine. Very often he writes admitting its presence, but equally often it is denied; and it is possible that some of these denials are such on a certain kind of principle, but I am quite satisfied that some of these denials are reliable and honest, showing that organic murmurs, which may have existed, have disappeared.

Accentuation of the aortic second sound I regard as being of grave significance especially when observed in those past middle life. When present, most careful examination should be made of the state of the blood vessels. Changes in them would naturally lead us to expect hypertrophy of the left ventricle, indications of which are likely to be present. This accentuation I look upon as a most important physical sign and I fear one that is rarely thought of by medical examiners. Careful examination of the blood vessels may reveal some degenerative changes that will account for this abnormal condition of the heart, or it may be that the chemical examination of the urine will by the presence of albumin explain these changes. If not present at the time of examination I would fear its appearance at a later period or possibly the onset of some cerebral disturbances. Under any circumstances I look upon these cases as extremely hazardous lives.

Disturbances in the rhythm of the heart's action are of comparatively frequent occurrence. It may be that the symptom is purely functional, depending upon some derangement of the nervous control of the heart's movements. Whilst many of these cases may be due to causes easily recognized and satisfactorily treated by the physician, many others may arise from some obscure and serious organic disturbance of other organs, so that I consider it wise to give the insurance company the benefit of any doubt that I may have, and postpone, if not absolutely reject, the risk. This caution applies with much force to those cases of applicants who are accustomed to the daily and frequent use of alcohol. In these individuals the effect of chronic alcoholism in causing degenerative changes in the heart muscle may manifest itself in the state of the pulse.

The intermittent pulse or heartbeat I do not consider to be inconsistent with perfect health. I am sure we can each of us, who have been in practice many years, call to mind patients who in our earlier years were known to have intermittent pulse and who are still alive and in sound health and with the same intermission. I can recall several such cases, individuals in perfect health and free from so-called vicious habits. On the other hand it may be an evidence of disturbed nervous control of the heart, easily remedied by correction of some faulty condition of the digestive apparatus, or possibly some objectionable habit of applicant. I am sure it is the experience of every one of us to have had, at various times, under our care patients with irregular or intermittent pulse, which

we can clearly trace to the immoderate use of tobacco or possibly even tea—cases which get perfectly well in ceasing the abuse.

The condition of the muscular substance of the heart itself is one that comparatively rarely calls for an opinion on the part of the medical board of an insurance company as the result of the report of medical examiner's examination of applicant. Death claims that are continually being paid by the companies forcibly impress upon them the fact that some of these claims might have been avoided had they adhered strictly to the rule of considering very fat men as impaired lives. Sudden heart failure is frequently the cause of death given in these cases. The result of the examination in the post-mortem room, when made in many of these cases, shows that death may be due purely to changes in the heart muscles, alterations in structure that may have been going on for years and yet give no indication so far as the stethoscope or the pulse are able to reveal. It may be that the applicant previous to examination had experienced unpleasant symptoms, which he looked upon in an altogether different light when under examination for insurance, than when consulting his medical attendant. In the former case he makes light of these symptoms and without any dishonest intentions makes no reference to them. In the latter he is careful to miss nothing, mentioning symptoms that may appear trivial, but which to the medical eye of the consultant may be of great significance. In this way signs of degenerative changes may be easily overlooked by the medical examiner and yet require the advice of a medical attendant.

Hypertrophy of the muscular substance of the heart without valvular changes I believe to be more common than is generally supposed. When occurring in young people without changes in the character of the aortic sounds it may or may not be of grave significance. It is no unusual condition to meet with this condition in young men of slight physique but hardened muscles due to athletic or active exercise. In some of these cases you would expect to find normal vessels, although possibly a commencing endarteritis due to increased blood pressure, may be present. But when met with in individuals about or past middle life, in whom careful auscultation of the heart reveals abnormal sounds, we then have to deal with a case that requires a most careful consideration to do justice to both applicant and the insurance company. These points I have already referred to.

Of these diseased states in which a physical examination very frequently reveals absolutely nothing, perhaps the best marked is angina pectoris. We have all met with cases of a most pronounced character, in which nothing could be made out in the intervals of the attack—sometimes even during the attack itself. Whilst post-mortem examination frequently confirms our opinion as to the condition of the heart

and vessels that we believe to be present, possibly just as often it happens that nothing satisfactory is furnished us by the autopsy. In cases presenting symptoms in which there are but the faintest suspicion of this much to be dreaded affection, the medical examiner would naturally advise postponing the acceptance of the risk.

Having recognised some one of the forms of heart disease to which I have referred, speaking from an insurance point of view, the question at once arises: How are we to act in connection with these cases, doing justice to the applicant as well as to the company we represent? Of course there can be no question but that they are impaired lives, *i.e.*, taking one hundred cases of heart disease and comparing their duration of life with one hundred cases at same ages and in similar occupation and with similar family history, who are, however, perfectly healthy and with normal hearts, the duration of life will be considerably longer in the latter. Now, as the premiums charged are lower on the latter class of cases, the important question arises: By how many years will this last class survive the former? This is a most difficult matter to arrive at definitely and on a truly scientific basis, as so few statistics are available of the probable duration of life in heart affections. To draw our conclusions from hospital statistics or private practice, would be manifestly unfair to the applicant for life insurance. As a rule it is only when failing compensation has produced symptoms that call for medical advice that these cases come under our care, whereas the medical examiner necessarily discovers many such cases that live to a good old age, dying of diseases in no way associated with the heart affection.

For these reasons there is no unanimity amongst companies as to the procedure that should be adopted in these cases. The tendency of late years is to place fewer restrictions. In my early years of life insurance it was the custom of nearly all companies to regard these cases as extremely hazardous ones, and by many as uninsurable. Later on some discrimination was practiced by some companies—they would under certain circumstances offer policies with very much increased premiums. At the present day many companies will not accept cases with heart murmurs on any terms. Some companies will not accept on any terms lives with aortic murmurs, whilst they are willing to issue policies in some cases of mitral regurgitant murmurs. I quite agree with them so far as aortic regurgitant murmurs are concerned, as I consider them too hazardous to accept on any form of policy that an applicant is likely to accept. The practice adopted by the English companies, where they are willing to assume the risk, is to add a certain number of years—say five to ten, generally about seven—to the age of applicants and charge the premiums at the advanced age. Thus an individual aged say thirty years would pay at the rate of thirty-seven so long as he lives. I doubt

very much if this is sufficient protection for the company, as the healthy individual aged thirty has an expectation of thirty-five years, whilst the rate charged for one aged thirty-seven is calculated upon the basis of living for a little over thirty years. That would shorten the expectation of life in the heart cases a little less than five years, and I doubt very much if that estimation is in accordance with facts, as I fear the difference to be much greater. American and Canadian companies that are willing to accept these risks as a rule adopt a different plan. The plan adopted by the company with which I am connected, when we first accepted these risks, now about fifteen years ago, was to offer a ten-year endowment policy with a diminishing debt on it. Increased experience has taught us that longer term policies are safe investments; so that now we issue a fifteen or twenty-years' endowment with a debt of $600.00 per $1,000.00, gradually diminishing, until at the end of the term the debt would be completely wiped out, and the full amount paid over to the applicant if he survived to draw it. If he died in the meantime, a proportionate amount is taken off, according to the number of years he lived. If death was the result of accident, the lien does not apply, so that the heirs of applicant draw the full amount no matter how soon after issuing the policy. This appears a very fair form of policy, as at the end of the period applicant is in as good a position as one with a perfectly sound heart. I am told that one or two American companies will issue an endowment policy with profits without any debt except as far as it applies to the profits. An individual dying at any time before the expiration of the twenty years loses all his profits. This plan is a better one for the applicant who dies shortly after effecting an insurance, but is certainly very much worse for the individual who dies anywhere near the time the policy matures. The age of the applicant is an important consideration as to whether or not a policy should be issued and the term of endowment or the extra rating. My own opinion is that after fifty years of age no valvular case ought to be accepted unless it can be clearly shown that the condition is one that existed in youth, and there are present no unfavourable symptoms. Cases that have made their appearance during adolescence and have existed for several years subsequently without any discomfort whatever or apparent injurious effect, may, I think, be looked upon as likely to reach the so-called expectation of life, and are safe investments for insurance on the plan mentioned, that is to say, with a very heavy lien or addition to age.

Cases of mitral stenosis or double valvular murmurs, some companies are willing to accept with a high extra; for my part I consider them altogether too hazardous to accept on any terms.

Aortic cases, even when appearing in the young, no matter from what cause, I consider too hazardous to accept on any terms after forty-five

or fifty years of age, as we know that these cases proceed to a fatal issue more quickly than mitral.

With regard to functional murmurs, I think it advisable to postpone the accepting of these risks for a few months, unless the applicant be willing to accept a loaded policy; they unquestionably are impaired lives. It is quite true that the impairment is probably only temporary or of but little significance, but as it exists, the applicant cannot be claimed as a first-class life in every respect, and therefore should not expect a policy on as good a plan as one free from blemish. Where it is associated with anæmia I would certainly advise postponing it, as the anæmic condition, if very long continued, is likely to produce permanent structural changes. When due to other causes a very slight addition to the rate will cover any extra risk.

The occupation of the applicant has a very important bearing on life insurance in heart cases. When, apart from heart trouble, we take into consideration the fact that excessive or increased blood pressure, if long continued, is sure to produce a change in the structure of the blood vessels of the nature of a chronic inflammatory condition, in fact an endarteritis, we know that it must result in a thickened state of the vessels. That thickening will interfere with their physiological functions of rhythmical dilation and contraction, and eventually cause them to become practically almost rigid tubes. Now, if added to this we have leaky valves, the natural inference must be that any man, whose occupation requires high blood pressure, and who has diseased valves, ought not to be accepted without a very heavy extra, even supposing up to the time of examination he was not aware of his physical defect and had suffered no inconvenience from it. The chances are very strong against this individual reaching an advanced age. We have to dread all the consequences of the heart losing its compensating power before he reaches fifty years of age.

Quite different is it with the man who is accustomed to a sedentary life, provided he is not a speculative individual; the latter case I would dread almost as much as the hard-working man. It it a curious and interesting fact that the deaths from cerebral apoplexy are much greater amongst those who are able to insure their lives for five thousand and over, than amongst the poorer classes; showing the bearing of mental worry in producing changes in the vessels, for it is the wealthier classes who worry the most. The clerk with the small income, which satisfies all his wants, although he may have a leaky heart, may easily reach his expectation so far as life insurance is concerned.

LIFE INSURANCE AND CARDIAC DISEASE.

BY

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It has been gradually recognised that the presence of a cardiac murmur is not necessarily a sign of serious cardiac disease. In many instances such a sign need cause no apprehension for the immediate future, and in others no material shortening of life need be anticipated. Under these circumstances it is not surprising that many insurance offices are now ready to accept selected cases of cardiac disease for a term of years, or again to insure them with the protection of a lien.

The practice of different companies varies widely. The more conservative still decline any case so long as a murmur is present whether this be of organic or non-organic origin. In many instances this results in an injustice to the applicants and in a loss of business to the company. Others, more progressive and liberal, endeavour to distinguish the more serious cases of disease from those of a benign character. In the selection it is needless to say that much depends on the knowledge and discrimination of the examiner, and his responsibility is much increased in dealing with damaged lives.

There are certain principles to be considered in endeavouring to form a prognosis in any case of cardiac disease, and this must be based on the individual's whole clinical history and on his general health, as well as on the local evidences of disease. Much stress must be laid on a history of acute rheumatism which leads in many instances to serious and even fatal consequences. The proportion of cases in which the heart is damaged in acute rheumatism is variously stated in different statistics. In 965 personal cases of Pribram the heart suffered in 38.2 per cent.; these figures closely correspond with those of Schott, 42.9 per cent.; Schramm, 38.7 per cent.; and May, 42.75 per cent. We may therefore safely conclude that in over one-third of the cases of rheumatism a damaged heart is the result. With this knowledge it is not surprising that insurance companies are extremely chary of accepting applicants who have recently suffered from the disease, particularly when it is remembered how often recurrence and fresh damage to the heart may ensue.

Hereditary influences play only an indirect part in cardiac disease. Acute rheumatism has undoubtedly an hereditary tendency, but as the disease usually appears in children or young adults, hereditary influence

need seldom weigh against an applicant, hitherto free from rheumatic disease. Arterial sclerosis, on the other hand, with its accompanying renal and cardiac changes, is a very important factor in estimating longevity. Members of arterio-sclerotic families are often large in bone and muscle, they are often somewhat free livers, or again they may be subject to frequent mental strain, as financiers or professional men, and fail to attain old age through disease of the arteries. After middle life the effects of vascular or renal disease are noticeable, and they succumb to cardiac disease or apoplexy. Where a marked history of cases of this nature runs through families insurance offices may well regard such business as unduly risky, and provide against loss by refusing to accept them as first class lives.

The habits of the applicant particularly in regard to the use of alcohol is of much importance. Excesses in this direction undoubtedly lead to hypertrophy and dilatation, often with degenerative changes in the heart. In a damaged heart this influence is even more potent, and excesses can only be regarded as of more than usual gravity.

The sex of the individual has some bearing on the prognosis. Men usually stand cardiac disease worse than women owing doubtless to their more active lives and their more frequent abuse of alcohol. An important exception must however be made in the case of married women, in whom pregnancy not infrequently induces the first symptoms of failing compensation. In mitral stenosis the influence of pregnancy seems to be more injurious and fatal than in any other cardiac lesion.

With regard to the station in life, the affluent or sedentary classes are much more favourably placed than those engaged in manual labour. The necessity of daily toil removes the possibility of obtaining the periods of rest which are often essential for the prolongation of life. Cases in which the lesions are stationary for a period of three or more years are much more favourable than recent cases, in which it is difficult to estimate how rapidly further changes may develope. In the single interview accorded to an examiner it is usually impossible to determine this point, and it is one on which important information may sometimes be obtained from the family physician. A stationary condition may be inferred when acute rheumatism dates back several years, and when with this, changes in the size of the heart are trifling or absent.

We may next briefly consider certain cases where murmurs are present and are regarded as of functional origin, and then pass on to the consideration of cases due to organic change in the heart or its valves. A frequent difficulty is met with in young nervous people in whom the heart's action becomes rapid or violent under examination. The forcible action and the occasional presence of a murmur under these circumstances may lead to an erroneous diagnosis, and it is only by subsequent examination that such an impression can be corrected.

Systolic murmurs at the pulmonary region are of a frequent occurrence; although soft and blowing they are occasionally harsh and loud, and may even have a character closely resembling pericardial friction. They are often heard up to the sternoclavicular joint and are occasionally transmitted to the aorta and heard down to the apex. Although more frequently found in chlororic girls than in other conditions, still it is important to remember that they are occasionally found as a temporary phenomenon in healthy well-nourished men. They are frequent in neurotic hearts, in the latter stages of febrile affections, and in a variety of debilitating conditions, but as these have no special bearing on the present subject they need not be further referred to. When the heart and vessels are free from disease, when there is an absence of cardiac enlargement, of arterial sclerosis and of a history of conditions leading to cardiac disease, the prognosis must be based rather on the general condition of the applicant than on the presence of the murmur, and if we can feel fully satisfied that it is of a functional character it may be disregarded.

Another murmur which is frequently heard is that in the subclavian arteries. It is systolic in rhythm, often rather harsh, more common on the left than on the right side and not infrequently present below and to the outer side of the clavicle. This murmur often occurs in strong, healthy men and has been attributed to the pressure of large muscles on some part of the subclavian artery altering its calibre at certain parts of its course. In the absence of pulmonary disease I believe it may be disregarded as of any special significance, although it has occasionally led to a suspicion of aneurism.

The cardio-pulmonary murmur is heard at the apex or just outside it, or sometimes along the left border of the heart and even along the right side of the sternum. It is soft, systolic, short and puffing, and its most important character is due to its being distinctly influenced by respiration, being heard best at the end of inspiration and dying away with expiration. It is, however, sometimes heard all through the respiratory phase, becoming extremely faint during expiration. If careful observation shows that it has these characters and if other evidence of cardiac disease is lacking it may be disregarded.

In all forms of cardiac lesions, after compensation has once definitely broken down, the tenure of life is insecure and uncertain. Although cases are occasionally met which survive for a period of ten or fifteen years after suffering from general anasarca, yet these are too exceptional to allow of their being taken into account. According to N. S. Davis, the average period of duration of life after compensation began to fail varied from 2.6 years in mitral regurgitation to 3.8 years in aortic

stenosis, the figures for mitral stenosis and aortic regurgitation being between these extremes. Both Broadbent and Balfour place the average duration of aortic regurgitation after signs of failing compensation have set in at four years.

The acceptance of cases for life insurance in which there is judged to be organic disease requires a good deal of nicety in selection. There are obviously numerous cases which must be ruled out as likely to terminate fatally in a few years, or again from the nature of the disease a fairly definite opinion cannot be expressed that the applicant will live for a period of ten or more years.

Affections of the myocardium without valvular lesion occur for the most part over middle life, and therefore in a class who seek insurance less frequently than younger individuals. Cases of dilatation and hypertrophy are so frequently associated with degenerative changes in the arteries or kidneys, or result from alcoholic excesses that they are, in my opinion, too risky and uncertain to be eligible risks.

We must of course recognize that many individuals with moderate grades of cardiac enlargement survive for long periods of years, but it is difficult, usually impossible, to say with any degree of certainty how far degenerative changes have proceeded. Many cases of cardiac dilatation are associated with or due to sclerosis of the coronary vessels, and the impossibility of recognising such changes during life, in the majority of cases, should render us very cautious in recommending the acceptance of such risks, more particularly as the liability to sudden death is a notorious feature of such cases.

Fatty infiltration of the heart is usually found in very stout people who habitually get easily out of breath on exertion. Such individuals, altogether apart from the condition of the heart, are usually regarded with disfavour by insurance officers. Experience shows that the expectancy of life in obesity is not so good as in individuals of about normal weight, and it is a common practice to reject applicants who are more than 40 per cent. over weight. A hard and fast rule in this respect is however unfair. Individuals who owe their over-weight to bone and muscle must be regarded with more favour than when the excess occurs in fat and flabby subjects.

It is in valvular lesions that the chief problems lie in connection with life insurance. Serious lesions at the aortic valve are usually due to regurgitation. This in turn depends on rheumatic inflammation or on the slowly advancing sclerotic changes resulting from strain, syphilis, or arterial sclerosis. The rheumatic type is usually regarded as the more benign, owing to the freedom of the coronary arteries, but this advantage may be balanced by the tendency to further damage to the valves in subsequent rheumatic attacks. The liability to sudden death

is seen in all forms of aortic regurgitation and more particularly in the arterial cases where the orifices of the coronary vessels are apt to become narrowed from the sclerotic process, or again, these vessels may suffer from sclerotic changes and diminution of their calibre at any point of their course. This tendency to sudden death is in itself sufficient reason to reject all applicants with aortic regurgitation.

True aortic stenosis is, apart from senile cases, a rare disease. It is a common mistake to regard systolic murmurs in the aortic region as depending on stenosis. In the great majority of instances this is incorrect, these murmurs being sometimes functional or depending on slight thickening of the semilunar segments or of the intima of the aorta. The rough harsh murmur, the thrill, the ventricular hypertrophy and the small slowly rising and prolonged pulse of true aortic stenosis are absent. The prognosis is favourable in cases of aortic direct murmur when evidences of degenerative changes are absent and when there are no compensatory changes in the ventricle, and are probably about equal to cases depending on slight changes in the mitral valve. In people over middle life the probability of such murmurs being due to arterial sclerosis must be borne in mind. True aortic stenosis is a serious disease, and although the risk of sudden death is not great, yet the duration of life is materially shortened.

In connection with lesions of the aorta a brief mention may be made of the accentuated ringing second sound so commonly heard in arterial sclerosis and renal disease. The sound may not be unduly loud, but it is higher pitched, sharper and more metallic than in health. The presence of such a sound may be an early sign of interstitial nephritis, and even precede the presence of albumen in the urine, or it may indicate sclerosis of the root of the aorta with involvement of the coronary arteries, and it is therefore when present quite sufficient to warrant a rejection. In a patient under my care at the Montreal General Hospital this ringing sound was the only evidence of cardiac disease, and yet this man died quite suddenly one day in rising from his bed.

Lesions of the mitral valve are usually regarded as less serious than those of the aorta. The tendency to sudden death is so slight that it may be practically disregarded, and when this accident does occur it is almost invariably preceded by a long period of failing compensation. Whether mitral stenosis or mitral regurgitation is the more serious lesion is a question on which writers are by no means in accord. If all systolic murmurs heard at the apex are included with mitral regurgitation there can be little doubt that this form of disease is less serious than stenosis. Many murmurs are however of a temporary character and are found under varying circumstances, such as excited action of the heart, from temporary dilatation, from anæmia or from slight cases of endocarditis which occur without serious deformity of the valve.

Osler states that the most favourable cases are those in which a moderate degree of stenosis is associated with regurgitation, whilst the worst cases are instances where the valve is much puckered and contracted, allowing of free regurgitation. He is inclined to regard regurgitation as almost as serious as stenosis. Oliver regards regurgitation as the more serious lesion. N. S. Davis states that the average duration of compensation in regurgitation is 5.1 years and in stenosis is 9.5 years. It is obvious, however, that each case must be judged on its own merits and no general rule can be laid down as to the number of years in which compensation is likely to be maintained.

Stenosis of the mitral valve occurs for the most part in young people. In 31 cases of which I have notes only 5 occurred over forty. Of five fatal cases the average at death was thirty-eight, a figure which corresponds very closely to Broadbent's statistics (males 33, females 38). The comparatively early age at death and the infrequency of this lesion over forty clearly indicates the marked tendency to the shortening of life. Although the rheumatic process which terminates in stenosis frequently begins at about puberty and terminates in males at 33 and in females at 38, he would be a bold man who would venture to guarantee a period of ten years in a well-marked instance of this disease. Even in patients in whom compensation is well maintained, in whom dyspnœa on exertion is slight or absent, a break down may come on rather rapidly and unexpectedly. Pulmonary embolism frequently forms an early link in the downward course. Pregnancy is accompanied by serious dangers, and again compensation may be seriously and permanently disturbed by an attack of pneumonia. Recurring bronchitis so frequent in mitral lesions reacts injuriously on the heart and tends to bring about a cardiac breakdown. Apart from such causes compensation in the left auricle and right heart must ultimately give way, and once disturbed is not likely to be fully regained.

It is in mitral regurgitation that we most commonly see examples of prolonged duration of life in chronic cardiac disease. Even with sufficient damage of the mitral segments to lead to considerable enlargement of the heart the patient may survive for a period of twenty, thirty or forty years, and during this long period of years may suffer from such cardiac symptoms as moderate dyspnœa on exertion and recurring bronchitis.

In selecting cases of mitral regurgitation it must always be borne in mind that a fatal termination is not infrequent before thirty-five years of age and consequently only favourable cases can be considered as suitable for life insurance. In the physical examination the mere noise of the murmur must be disregarded and attention paid to the apex site, to the character of the impulse, to the percussion dulness of the heart

and to the character of the pulmonary second sound. It is only when these secondary changes are slight or absent that we can feel assured that the cardiac lesion is not likely to be of a serious character. The graver forms of mitral regurgitation are evidenced by considerable enlargement of the left ventricle, by a diffuse and feeble impulse and by a marked pulmonary accentuation. Absence of pulmonary accentuation may, however, indicate a failing right ventricle, but here other danger signals will not be lacking. The character of the pulse must be carefully considered. If of good volume and average tension it is evidence of a strong ventricle and consequently indicates a favourable outlook. Irregularity of the pulse is more frequent in mitral regurgitation than in any other valvular lesion and if only occasionally present may not indicate any serious cardiac disturbance. It is, however, a sign which must be regarded with a certain amount of apprehension, and if it continues it is of unfavourable omen.

In estimating the extent of a mitral lesion the presence or absence of symptoms is of much importance. Where the heart proves insufficient for the daily requirements of its possessor, when for instance dyspnœa is produced by moderate exertion, when œdema of the ankles is present in the evening, or when any tendency to pulmonary, renal, or hepatic congestion exists, then the applicant cannot be considered eligible from an insurance standpoint.

The class of cases therefore which an insurance company is safest in accepting are those of mitral regurgitation and aortic direct murmurs in which secondary changes in the heart are slight or absent. Cardiac symptoms, particularly dyspnœa on exertion, should be excluded by the personal observation of the examiner, and as far as possible all cases excluded in which the lesion is likely to be progressive. Recurring rheumatic attacks exert a most unfavourable influence from further attacks of endocarditis or pericarditis.

A station in life not involving manual labour and early adult life, at which period arterial sclerosis is unlikely to be present, are further elements which must be weighed in the acceptance of such cases. Careful habits and good general health are also important in estimating these risks.

In conclusion, it may be said that life insurance companies usually take the precaution of preventing heavy losses by limiting the insurance to a term of years, by adding an increased premium or by a system of liens. Under such a system there are many individuals the subject of murmurs or slight cardiac lesions who can obtain the benefit of insurance. Although occasionally unexpected losses are likely to occur, yet these will be more than balanced by more favourable cases.

NOTES OF THREE HUNDRED AGGLUTINATION TESTS TRIED WITH B. COLI COMMUNIS.

BY

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(From the Molson Pathological Laboratory, McGill University.)

In the absence of sufficient data upon the agglutinative action of blood serum upon B. coli, it was thought well to try this action in a routine of cases taken at random in the various wards of the hospitals; and, in addition, some healthy cases were observed. Many of the cases noted, were examined with a view to their Widal reaction, and those which gave the reaction are referred to as typhoid.

Technical Method.

Three forms of B. coli were isolated, selected from a number, and named I., II. and III.

1. Showed slight motility, slight fermentation and very slow formation of acid. It was isolated from the healthy bowel.

II., from the stomach of a case of pernicious anæmia (and proved to be B. coli), was of very slight motility, moderate acid-forming and slight coagulating ability, and of moderate gas-producing power.

III., was isolated from the bowel of a case of chronic diarrhœa, was of slight motility, strong acid-forming and coagulating power, and strong gas-producing power.

The limit of reaction fixed at one hour; and the dilution was in case of fresh serum, 1 in 10. Where the specimen was dried blood, a dilution was made as near as possible to 1 in 10, though of necessity this could be only estimated. Whenever a specimen was positive at 1 to 10, it was tried at 1-20, 1-30, etc., until reaction failed.

A complete reaction was decided to be present in those cases in which cessation of motion occurred, together with clumping and decided clearance or tendency to clearance of the field between the clumps. Where there was a distinct clumping without the field being cleared of free bacilli, the reaction was called "suggestive." These semi-reactions were fairly frequent, and no doubt indicate the cases in which a true reaction would occur if the dilution were 1-2, 1-3, etc., instead of 1-10.

Every hanging-drop was examined as a control previous to the serum being added to the culture, to prevent pseudo-reactions. This was especially necessary in the case of Colon iii, which at times would show a pseudo-reaction 2 to 3 hours after the bouillon had been inoculated.

It was found necessary in this case to use one of two expedients, viz.: (1) use the culture at a very early moment after inoculation, or (2) use a bouillon culture 3 to 5 days old, when the greater number of the bacilli settled as a sediment, and those in the supernatant fluid showed little, if any tendency to clump. At the same time, the question arises if, from some cause, such bacilli would not have lost their power of clumping to ordinary stimuli (such as that of bloom serum).

Results (300 Agglutination Tests).

Positive	10
Suggestive	18
Negative	272

Of 10 positive reactions, the distribution was:

With bacillus	I	1
" "	II	1
" "	III	8

Of 18 suggestive reactions, the distribution was:

With bacillus	I	1
" "	II	2
" "	III	15

Of the 10 positive in 1-10 dilution, one showed a positive reaction in 1-15 dilution; the others no higher than 1-10. One case only (a case of undiagnosed chronic stomach trouble, (gastritis) reacted to both ii and iii.

Of 10 positive reactions, the diseases were as follows:

Bronchitis	1
Typhoid (convalescent)	1
Anæmia	1
Gastric ulcer	1
Gastritis? (v. sup.)	1
Undiagnosed	5

Of 18 suggestive reactions, the diseases were as follows:

Appendicitis	2
Acute rheumatism	1
Bronchitis (acute)	1
Exoph. Goitre	1
Typhoid	3
Gastritis (v. sup.)	1
Organic heart disease	1
Undiagnosed	7
Normal	1

Of cases, possibly of B. coli infection, which gave no reaction, the following were tested :

Cholecystitis	1
Appendicitis	3
Typhoid	11
Probably typhoid, no certain data	8

Results, Inferences, Etc.

1. The greater liability to reaction of III, renders it very desirable that different races of B. Coli should be used, each one with a shorter series of cases than 100.

2. As has been frequently stated, the liability of a strongly acid and gas-producing bacillus to clump (so far as this series shows) is demonstrated.

3. It is desirable that the virulence of such a strongly acid and gas-producing bacillus, be tested; as it is probable that from its growth and character on different media III. would have proved to be the most virulent of the three forms selected.

4. It is also desirable that a dilution of at least 1 in 10 and a time limit not exceeding 1 hour be adopted, that the clumping power of normal blood serum be avoided.

5. It is desirable that a series of cases of such acute infections as are liable to be caused by B. Coli, should be tested. So far as the above series goes there appears to be no increased reaction observed in the cases of appendicitis, cholecystitis, etc.

From the number of postitve typhoids which gave no reaction (in which the Widal test was made the crucial point), it, so far, does not differ from the observations already made by Drs. Johnston and MacTaggart, that a decided reaction of B. Typhosus is generally accompanied by a low degree of reaction to B. Coli.

6. If, as the researches conducted here by Drs. Adami, Nicholls and Ford seem most clearly to demonstrate, the colon bacilli and other bacteria are constantly being taken in small numbers into the system, and are to be found in the tissues in various stages of degeneration, then this mere taking up, even if constant, is not, under ordinary conditions of health, sufficient in man to develop any pronounced serum reaction against the colon bacillus. This would seem to indicate that the mere act of arrest of growth and destruction of bacteria by the tissues, does not in itself lead to the development of any large quantity of agglutinating substance in the circulating blood and may indicate that there must be an active proliferation of the bacteria in the tissues before any recognisable amount of agglutinating material is produced.

7. Lastly, remembering how abundantly the colon bacilli proliferate

within the intestine under normal conditions, it would not have been surprising to find that human blood constantly exerted a very definite agglutinating action upon the colon bacillus. The very fact that the reaction is so relatively uncommon is of interest as showing that the presence of toxine-bearing and toxine-producing bacteria within the intestines does not result in the circulating blood containing what I may term, broadly, reactive substances. It is true that like those of the typhoid bacillus, the toxines of the colon bacillus only diffuse out with difficulty. It is difficult, however, to imagine that none of these toxines are discharged from the bodies of the bacilli when they are growing within the intestinal canal and that none are absorbed. Indeed, the results here presented, so far as they go, seem to indicate that for the development of agglutinating substances in recognisable amounts within the blood, there must be some very intimate reaction between bacilli which have invaded the tissues and the tissues themselves.

EXCISION OF THE EYEBALL AND SOME ALTERNATIVE OPERATIONS.

BY

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The operation of enucleation of the eyeball versus other methods of achieving the same object, is still exciting a good deal of attention amongst ophthalmologists the world over. The report of the Committee on Excision, etc., appointed by the Ophthalmological Society of the United Kingdom, and published in the Transactions of that society in 1898, has, it would seem, by no means settled the questions at issue, and the subject will come up for special discussion at the International Medical Congress to be held in Paris next July.

That the operation of enucleation or simple excision is not unobjectionable, there can be no doubt, else we should not see these persistent efforts to find something better. True enough, the removal of a hopelessly diseased or injured eyeball may confidently be relied on to bring immediate relief from pain and minimize the dangers of a threatened sympathetic ophthalmia, or of systemic infection in cases of intraocular sarcoma, etc.; but this operation is invariably followed by more than one undesirable consequence, such as the inevitable disfigurement which results from the more or less sunken appearance of the upper lid and the restricted mobility of the artificial eye subsequently inserted. Moreover, the hollow space between the glass shell and the depressed conjunctival sac retains secretions which in turn perpetuates a state of chronic conjunctival irritation, to the annoyance and discomfort of the patient. Erosions of the conjunctiva and subsequent cicatricial changes in many instances make the wearing of an artificial eye more and more unsatisfactory and perhaps impracticable.

All these disadvantages are in a great measure obviated by the Mules' operation of evisceration with the insertion of a hollow, glass globe in the scleral cavity, which, in contrast to excision, gives an infinitely better cosmetic result, both in regard to mobility and general appearance of the artificial eye, and in the healthy condition of the conjunctival sac, which now affords no free space for the accumulation of secretions. In a word, after a successful Mules' operation, the patient wearing a well fitting artificial eye is no longer abashed by a sense of disfigurement and is no longer annoyed by a chronic conjunctivitis.

The objections raised against the Mules' operation are :—

(1) Greater liability to sympathetic ophthalmia than in cases of simple excision.

(2) Excessive reaction and prolonged convalescence.

(3) Liability to fracture of the glass globe at any time after its insertion.

(4) Liability to extrusion of the globe, especially within a few weeks of the operation.

In regard to the first objection, it is worthy of note that the Committee were only able to find five cases in which the operation had been followed by sympathetic ophthalmia. In all of these the original injury was of a sort that would in itself be likely to cause sympathetic ophthalmia. In this connection it must be remembered that there are many cases on record in which sympathetic ophthalmia has occurred within a few days or weeks after excision, and it is a well established, clinical fact that in these the disease runs a much milder course than when it has come on before excision. Now the five cases above mentioned all followed exactly this rule and all recovered with good vision ; therefore, the first objection loses much of its weight.

As for the second objection, the question of a few days discomfort or a few weeks longer in hospital, can hardly be weighed against the subsequent advantages of the Mules' procedure.

The third objection lacks data to give it more than imaginary value.

The fourth rests so much on the judgment, care and skill of the operator that a definite estimate of its value is scarcely attainable. Some operators report a large percentage of failures, others a very small percentage.

The success of all surgical operations depends so much upon attention to details and perfection of technique, that such discrepancies can only be accounted for by the unknown quantity in "personal equation." The writer has only experienced two failures in twenty-six consecutive operations, and both of these were done in the presence of recognized contra-indications, viz., one in a case of suppurative panophthalmitis, the other in a greatly shrunken globe.

Apart from these two, twenty-four successive cases, all perfectly satisfactory in their results, tell strongly in favour of the technique followed by the writer, as described in a communication read before the Ophthalmological Section of the British Medical Association in Montreal, in 1897, and which differs in some respects from the original procedure of Mr. Mules, as well as from all other known modifications of that operation.

In the minority report of the Committee made by Mr. Thomas H. Beckiston, the statement of his views on the question of excision may,

in the writer's opinion, be accepted as perfectly sound and correct. The statement is as follows :—

"In accordance with the general principles of conservative surgery and the experience of practice, *excision* is only necessary in, and its adoption should be strictly limited to :—

"(*a*) Intra-ocular malignant growths and orbital malignant growths.

"(*b*) Extensively lacerated or contused wounds of the sclerotic.

"(*c*) Shrunken globes in which the uveal tract cannot with certainty be completely removed.

"(*d*) Cases where sympathetic disease has already been excited.

"In *all* other cases *evisceration*, with or without the insertion of a "sphere, is the embodiment of the above principle, and while respecting "the moral, religious and physical scruples of the patient, amply ful-"fils the pathological requirements of each case."

It is well to remember, however, that the class (*d*) may include cases in which the exciting eye still retains some vision; under these circumstances neither excision nor evisceration would be allowable. It should also be borne in mind that even when excision has been chosen as the most suitable operation, the insertion of a glass globe into Tenon's capsule, after the method of Adam Frost, may often be practiced to the great advantage of the patient, instead of simple enucleation.

A CASE OF ENTEROPTOSIS WITH FACTITIOUS URTICARIA.

BY

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The following case is of interest from the fact that while it presents in a marked degree the physical conditions of enteroptosis, the symptoms for which the patient sought relief were not apparently related to the abdominal condition ; although from the history of the case and the known connection between various forms of neuroses and this disease, in all probability they were induced by it.

Mrs. M., aged 26 years, came to the dermatological clinic of the Montreal General Hospital, complaining of red blotches on the face and body, appearing after any form of slight stimulation of the skin.

Family History. Father died at the age of 44 from unknown cause. Mother is living, aged 43, and in good health. She has three brothers and one sister living and in good health ; several of the family died in childhood of unknown causes. No history obtainable of tuberculosis, nervous diseases, etc.

Personal History. The patient was born in Halifax, N.S., and has lived in Montreal the most of her life. She has always had good health up to the commencement of the present illness. She was married at the age of 16, and has five children, all living. The first child was born within a year after her marriage, the next two at intervals of about eighteen months ; she then had two miscarriages at the second and third month, respectively. The fourth child was born two and a half years after the third, and the fifth eighteen months later again. She has nursed all five children and was perfectly well until the birth of the last child.

Present Illness. Three years ago, on leaving her bed after the birth of her last child, the patient noticed that she was not as strong as after her previous confinements and was very much troubled by great itching of the body at night. She is positive that she never suffered from this symptom before. This itching has continued up to the present time, getting neither better nor worse ; and seems to be induced by exposure of the skin to the cold air on the removal of her clothes. It does not prevent her from sleeping, passing off when she gets warm in bed. At about the same time the patient noted that in a few minutes after washing her face red blotches would appear on the parts touched by the water. These were accompanied by a stinging or burning sensation in the affected areas which passed away a few minutes later as the redness

FIG. I.

FIG. II.

disappeared. The same effect is produced by both hot and cold water and by merely rubbing the face with a towel. She has found, too, that they come out when she is using washing soda or lye, even though it does not come into contact with the skin. Emotional blushing instead of producing a general redness of the face comes out in similar patches. The condition is present during both winter and summer, but exposure to cold in the winter time will induce an attack.

Ten months ago, May 1899, she was in bed for two weeks with frequency of micturition and pain over the lower part of the abdomen. Four months later she began to suffer from pain in the left side of the abdomen coming on at odd times and often lasting a whole day. The pain she describes as feeling as if a blunt instrument was being thrust into the side and it has no relation to the taking of food, and is not accompanied by nausea or diarrhœa. At the present time she complains of having a lump in the stomach in the mornings on getting up. This lump occasionally rises into her throat and produces a choking sensation. While it has only lately become severe enough to cause much discomfort, this latter symptom has been present for over a year.

Present Condition. Patient is a slight, well nourished woman, of medium height and good intelligence. She is quiet and self-possessed and does not give one the impression of being at all of the so-called neurotic temperament. The mucous membranes are a good colour. The skin is pale, soft, and moist, but on getting her to rub her face with a wet towel, in a couple of minutes, irregularily shaped patches of bright red erythema make their appearance. These are accompanied by a burning sensation. On drawing the finger nail or a blunt pointed instrument over the skin of the thorax or abdomen, an extremely well-marked condition of factitious urticaria develops within five minutes. The wheals are raised, white, and surrounded by a zone of deep red erythema. (See Figure No. I.) The occurrence of the urticaria is attended by itching in the affected parts.

The thorax is long and narrow and tapers uniformly to the waist, measuring 28 inches just above the mammary glands, which are quite flat, 26 inches at the level of the xyphoid cartilage, and 24 inches at the waist. The subcostal angle is small and the distance between the lowest ribs and the crest of the ilium about one inch. There is a distinct transverse depression at the level of the ninth costal cartilages in the mid-axillary line, the ribs below this level turning abruptly outwards. The patient states that this was produced by tight lacing, and it corresponds to the waist. The lungs extend lower down than normal, percussion giving a clear lung note down to the seventh rib in the nipple line on both sides. The cardiac dulness is also lower than usual, beginning at the lower margin of the fifth rib above and extending from the left

border of the sternum 2¼ inches to the left. The cardiac impulse is felt in the fifth and sixth spaces just within the nipple line. The breath sounds and heart sounds are normal.

On inspection of the abdomen in the erect position there is seen a rounded prominence of the lower portion below the umbilicus, resembling the fourth or fifth month of pregnancy, but lower down and overhanging the pubic bones. See the accompanying figure II. By palpation the lower border of the liver can be felt 2½ inches below the costal margin in the parasternal line and the right kidney one inch below the level of the umbilicus and midway between it and the crest of the ilium ; while what is presumably the left kidney can be felt on the left side at about the level of the umbilicus. In the supine position the liver and right kidney can be easily palpated in the positions referred to, the latter being very movable, but owing to the close approximation of the costal cartilages to the crest of the ilium, it is difficult to gain accurate information with regard to the left kidney and the spleen. The skin of the abdomen is inelastic and marked with numerous lineæ ablicantes, the walls are very soft and lax and the abdominal aorta can be felt down to its bifurcation. The size and position of the stomach cannot be defined. There is no tenderness on pressure anywhere. The uterus is high up in the pelvis. The patient suffers from profuse leucorrhœa. The digestive and urinary functions are normal.

In the photographs the positions of the organs as determined by palpation and percussion was marked by black lines. The costal margin on the right side and the upper margin of the cardiac dulness can be seen as faint lines.

Since the patient came under my care she has been wearing an elastic abdominal supporter which has caused her considerable comfort, although she did not complain when first seen of the dragging or bearing down sensations so common in cases of enteroptosis. The support given to the abdomen by the binder makes her feel much stronger and better able for her work, but she was not aware of any particular weakness there until after she had tried the effect of the support.

It seems reasonable to infer that the enteroptosis bears a casual relation to the erythema and factitious urticaria. It is quite true that the condition of the nerves of the skin which is concerned in the production of factitious urticaria may be present for years and be only discovered by accident, as was the case in a patient I presented before this society about four years ago. In the present case, too, the patient was unaware of its existence until it was demonstrated to her. At the same time, the erythema of the face is only a less severe form of the same lesion and it could certainly not have been present without being detected. Of the other symptoms, with the exception of the pain on the left side of the abdomen, all seem to be of the nature of neuroses.

SOME REMARKS RELATIVE TO POSTERIOR POSITIONS OF THE OCCIPUT IN LABOUR.

BY

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Having carefully observed the difficulties which may arise due to occipito-posterior positions of the head during labour, I have thought that a few practical remarks may not be out of place and possibly of interest to some.

In a given case, a combination of circumstances and conditions is sometimes found which occasions the practitioner no little trouble and anxiety. I refer to occipito-posterior positions of the fœtus. According to Lusk, Hirst, and several others, these positions occur in about four per cent. of all cases. The greater proportion of these are supposed to rectify themselves during descent or even after the head has reached the pelvic floor, but my limited experience goes to convince me that the few cases which do not rectify themselves are quite sufficient to give trouble, especially among primiparæ.

As far as I have been able to clinically study these cases, I find that there is liability to a serious complication, that of *face presentation*. This would very naturally occur during descent by the occiput passing over the promontory and dropping into the hollow of the sacrum. Now comes trouble, if the pains are frequent and vigorous, and no time is to be lost. The face now is likely to be inpacted hard against the symphysis, and flexion is very difficult if not impossible to secure. It would, I think, be good practice not to allow such a condition to develop from an occipito-posterior position, for I believe it to be preventable if taken in time.

While the chin has not as yet impinged against the symphysis, it is comparatively easy to secure sufficient flexion to convert *face* in *vertex* presentation, by introducing the hand, palm downwards, along the posterior wall of the vagina, the patient being anæsthetised and in the dorsal position, and with the tips of fingers to raise and draw forward the occiput between two pains, holding it in this position until the next contraction takes place, when the position will probably be maintained. External backward pressure against the trunk of the child may, at this juncture, materially assist in bringing about a favourable termination.

But just at this point arises another difficulty. Flexion being maintained, descent progresses, but the occiput being to the rear, the vertex enormously distends the perineum, a condition which is quite difficult

to relieve and which results generally in more or less laceration of that part during the passage of the head. In multiparæ, this may often be in some measure avoided by the application of a pair of small, light forceps, lifting the head with cautious traction over the perineum until the parietal eminences engage in the vulva, when, after quick and careful removal of the forceps, the head may be forced forward, the face from the root of the nose to the chin sweeping sharply under the pelvic arch, and delivery being successfully terminated as in normal cases.

In primiparæ, however, these precautions are not usually sufficient to save the perineum from some amount of damage, however slight. Generally the laceration is extensive and is very liable to involve the bowel, but if this accident is immediately and properly repaired under strict antiseptic precautions, the risk of septic absorption may be inconsiderable.

Some writers on the subject consider these occipito-posterior positions the gravest of all abnormal positions, and for this opinion I see very good reason, for in cases presenting transversely or by the breech or shoulder, version may be employed, and the case terminated without special risk; whereas, in occipito-posterior positions, where the occiput fails to rotate to the front, nothing is left to the attendant but to deliver as promptly as possible in order to save the child and prevent further exhaustion to the mother. The conservative plan of "trusting to nature" will generally prove disastrous in these cases. Here, especially, as soon as a positive diagnosis of the position can be made, the lower bowel should be thoroughly washed out, if not already attended to, as accumulated fœcal matter may seriously interfere with already difficult descent, and jeopardize the integrity of the bowel which is already threatened by enormous pressure, and that in the direction most calculated to produce the worst results.

I may say that I have had, since I came to this country, six of these cases, one of which was rectified by anterior rotation during traction by the forceps. In the other five the abnormal position was maintained to the last. Taking an equal number of confinements while practicing in the east, I met with only two such cases.

My reasons for prompt interference in such cases as I have referred to may be summed up briefly:—After a labour which has already lasted many hours the patient is not in a condition to endure much more, and when all progress is arrested and the pains are utterly ineffectual, exhaustion very soon takes place and further delay is only making matters worse. Then, as regards the child, if the position of the occiput has resulted in developing a face presentation, delay is simply criminal;

for extension has become so great that undue pressure is exerted on the anterior aspect of the child's neck, congestion, probably fatal, being the result. If, on the other hand, the vertex presents, delay is almost as reprehensible as in the case just referred to, for, if the pains are strong, the perineum is likely to suffer ultimately, and probably severely.

Speaking generally of injuries during the passage of the head, I believe that in a large majority of cases, even under the most favourable conditions, the perineum suffers to some extent, and in very many cases, even in the hands of experienced obstetricians, and where the greatest possible care is exercised, pretty severe perineal lesions occur with great frequency. Where the conditions are reversed and everything tends towards the inevitable production of such lesions, the practitioner is fortunate who brings his patient through without her sustaining serious present injury, and perhaps a subsequent train of troubles.

NOTES FROM IOWA.

BY

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Congenital Fistula of the Neck.

J. K. O., aged thirty years, a hardware merchant, born in Norway, told me one day that he had a small weeping fistula in his neck, which had existed from birth. The external orifice of the fistula was located one inch above the sternoclavicular joint in the skin overlying the sternal head of the sternomastoid muscle. It never caused him any discomfort except if he happened to be wearing a shirt or collar which did not fit. At intervals it discharged a white, glairy, albuminous fluid, then it would seem to dry up for a while and later on break out again. Mr. O. told me that it had excited considerable interest among some of the leading physicians in Bergen, Norway, where he formerly resided. One of them had passed a fine probe in for about an inch. He did not wish anything done for the condition as it did not inconvenience him sufficiently to warrant surgical interference. I tried to pass an ordinary silver probe into the mouth of the fistula but could not introduce it as the orifice was too small. I record it merely as a curious congenital anomaly perhaps due to incomplete closure of one of the brachial clefts.

A Case of Smallpox.

On December 5, 1899, T. S., a clerk, aged 29 years, walked into my office and told me he was afraid he had smallpox. He stated that he had visited Albert Lea, Minnesota, (twenty miles north of here) about two weeks previously. Albert Lea had had an epidemic of smallpox for about six months at that time. I at once stripped off his clothes and found a beautifully marked smallpox eruption all over his body, of the discrete type just beginning to enter the pustular stage. The patient said he had been feeling under the weather for a week past and on November 30th had had a chill and high fever. On December 2nd he noticed the rash on his body but did not pay any attention to it. On December 3rd he consulted another physician for cold and loss of appetite and stated that he was afraid he had the smallpox on account of the rash on his body, but the physician without even examining the rash made a diagnosis of stomach trouble and said that the rash was probably due to the condition of his stomach. He was also given some powders which made him feel better, but as the rash kept on increasing he came to me on December 5th. I locked him up in my office and at

once notified the mayor that I had a case of smallpox in my office. A hurried meeting of the City Council was called and the city physician, Dr. C. A. Hurd, was ordered to see the case. He agreed with my diagnosis as did also Dr. T. M. Stixend. The first physician who had seen the case was asked to see the patient also but declined to do so for obvious reasons. An officer of the State Board of Health, Dr. J. C. Shrader, was telegraphed for and he pronounced it a well marked typical case of discrete smallpox. This was a great relief to the three of us who had pronounced it smallpox as none of us had ever seen a case before and the city was all agog with snap diagnosis of chickenpox, "Cuban itch," etc., made by lay wiseacres who not only had never seen the case but politely but firmly declined to see him in quarantine. The secondary fever set in after a few days with a curious phenomenon, viz., that the morning temperature was invariably (with but two exceptions) higher than the evening. I was discharged on the seventh day of my attendance by the patient himself on the ground that I was a robber for charging him $10.00 a visit. He made a good recovery under the subsequent care of an immune nurse. The patient had never been vaccinated.

A Family Epidemic of Diphtheria.

On January 4th, 1900, I was called eight miles out in to the country to see a case which I found on my arrival to be diphtheria. The patient, Rosa H., aged fourteen years, had been sick since the evening of January 1st. I gave her tincture ferri perchloridum, mx, and potassium chlorate, gr.iii. every two hours with whiskey. On my return to town I found that there was no antitoxin on hand, but on discovering by telephoning that there was some at Kensett, six miles south, and that it could be obtained there, I made arrangements to have it sent up early next morning. However, one of the druggists telegraphed in the night and a full supply was at hand by 1 o'clock p.m. the next day. I went out in the morning and injected all I had, the 500 units. I was sent for late the same afternoon as the girl was getting worse. On my arrival at six p.m., I found that the membrane had extended down the larynx and she could hardly speak and had a very weak thready pulse. I thought she could not live until the morning. I at once sent my team back to town for another physician, tracheotomy tubes, chloroform, etc., and gave immediately 2000 units of P. D. & Co.'s antitoxin. The consulting physician, Dr. D. S. More did not arrive until 10 p.m., by which time the laryngeal symptoms had greatly improved. He advised potassium bichromate gr. $^1|_{20}$ every hour to dissolve the membrane. She was given also strychnine sulphate gr. $^1|_{30}$ every hour for thirty-six hours. Later in the night we gave 2?00 units of antitoxin and in the

"wee sma hours" 500 more. We both gave her up for lost about 2 a.m., but she rallied and made a good recovery. I gave her sister, aged 16 years, and her brother, aged 8 years, 500 units each to immunise them.

I ceased attendance on January 13th, but was called out again on the 17th, as the boy Willie, had membrane in his throat. He had got wet making snowballs the previous day. I gave him at once 1500 units of antitoxin and his sister 500 as an immunizing dose. The latter had the next day a faint hoarfrost patch on the left tonsil. The following day it was the same so I did nothing more. The day following again she had a hoar frost patch on the right side of the uvula, so I gave her at once 2000 units of antitoxin and put her to bed. Dobell's solution was freely used in all three cases for cleansing the nares and also Loeffler's solution of thymol, toluol and alcohol as a spray to the pharynx. The latter had a very marked effect in dissolving and loosening the membrane, acting within fifteen minutes after its application. The first girl, Rosa, had paralysis of the muscles of the pharynx and larynx, but could taste and smell perfectly while the last one, Emma, could swallow quite well but could neither taste or smell. The boy had no paralysis at all. All three made a complete recovery. The first case was not seen until the fourth day and was consequently the most serious.

Before the house could be disinfected, after the quarantine period had elapsed, two little children whose mother was a sister of the above mentioned patients and who had died suddenly of eclampsia in the sixth month of pregnancy, were brought to the house to be taken care of by their grandmother as no one else could do so. Within a week or ten days, one a boy, aged 3 years, sickened and died before a doctor could get out to the farm. I was called next day to see the remaining child, Greta B., aged 5 years,, and found a marked case of diphtheria. I gave at once 1500 units of antitoxin and followed it by 1500 the next day and 1500 four days later. She made a good recovery having the same treatment as the others.

Scarlet Fever Complicated by Diphtheria.

On February 3rd, 1900, I was called to see E. T., a boy aged 7 years, whom I found to have scarlet fever. In quick succession three younger children, aged respectively 4 years, 2 years and 9 months, and the father and mother came down with the disease. On the 12th, the girl aged 4 years, developed diphtheria, and this disease quickly prostrated the whole family. Two women nurses were in attendance shortly after the diphtheria developed, and for a few days a man in addition to help about the house. The treatment was the same as in the preceding series of cases; antitoxin was used freely and Loeffler's solution as a spray.

The little four-year-old girl developed on the left side of the neck a mass of enlarged glands, extending from the jaw to the clavicle. After poulticing for a few days the mass was opened by Hilton's method and three and one-half inches from the skin an abscess was found containing about an ounce and a half of pus. The child had an extremely high fever running up to 107° F. at one time. In spite of all I could do, after being up with the child for two nights in succession, she died on February 23rd. After opening the abscess I had great hopes of her recovery, but the last night of her life she developed an enormous amount of flatulence and distension of the abdomen so that I began to fear that I had an intussuception to deal with. With a long rectal tube I irrigated the colon and forced soapsuds and water past the ileo-cœcal valve till the small intestines were thoroughly flushed out. The water was all easily expelled by gentle massage and her abdomen returned to its natural size. She died of diphtheria with the scarlatina rash still on her body. The other cases all recovered after a serious relapse caused by the fires going out one night when they all took cold.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Early Diagnosis of Measles.

CAZAL. "Du Diagnostic précoce de la Rougeole." *Gazette des Hôpitaux, No 94, 1899.*

The difficulty in preventing the spread of measles lies in the fact that the disease is most contagious before the appearance of the exanthem, during the height of the catarrhal symptoms. It follows that isolation of the patient on the appearance of the rash is quite futile, and that every means should be taken to detect the disease at an earlier stage. There is nothing pathognomonic in the initial oculo-nasal catarrh that ushers in an attack of measles, and unless there is an epidemic of this disease the symptoms are apt to be mistaken for those of a non-specific coryza. There are, however, certain signs contemporaneous with these inflammatory phenomena in the larynx, eyes and nose, which permit a positive diagnosis of measles to be made at least two days before the appearance of the rash. The buccal and pharyngeal mucous membrane and the soft palate are reddened and swollen; the gums particularly are swollen, and, though not bleeding, are frequently covered with an easily detached, pultaceous deposit. This "erythemato-pultaceous stomatitis," first noticed by Comby, is almost constant, appears most frequently two days before, and lasts as long as the rash. No doubt, as Comby says, it is not confined to measles, occurring as it does with scarlatina, influenza and other acute diseases. But it is absent in German measles and in morbilliform erythemata, and thus serves to exclude pseudo-measly eruptions. Another early sign noted by Sevestre and d'Espine is a punctiform erythema appearing on the soft palate one or two days before the exanthem.

Still more important is the enanthem described by Koplik. This consists of bluish-white spots, two to six millimetres in diameter, found on the inner surface of the cheeks and lips and surrounded by an in-

flammatory areola. These "Koplik's spots" are usually six to ten in number, sometimes more, and may be found usually three days before the eruption on the skin, disappearing when the latter shows itself or on the following day.

Combe (of Lausanne) has found them in 95 per cent. of his cases. (Slawyk, reporting from Heubner's clinic, finds them in 96 per cent. of the cases.)

No value attaches to the phenomenon described by Bolognini as peritoneal friction, and supposed to be due to an enanthem affecting the peritoneum covering the intestine. It is, no doubt, produced in the intestine and is common to many diarrhœal conditions.

The above signs, if carefully sought for, should enable the physician to make a diagnosis of measles during the period of invasion. Combe, however, believes that the disease is contagious even during the last days of the period of incubation, and claims to have found a new sign which will at least suggest the diagnosis, even before the development of any catarrhal symptoms. He has observed that during the period of incubation of measles there is always a considerable *hyper*leucocytosis, which reaches a maximum four or five days before the buccal enanthem appears and then declines, gradually giving place to a *hypo*leucocytosis during the last two days of invasion and throughout the period of the skin eruption. In a given case the leucocytes, four days before the enanthem, numbered 34,000, and on the second day of the skin rash had diminished to 5,000, per cubic millimetre. It is not claimed that the hyperleucocytosis is special to measles, but that it appears during the period of incubation while in other diseases it is found only when the symptoms have declared themselves. It is obvious that this means of investigation is adapted chiefly to hospitals, polyclinics and schools, where it is very important to restrict the spread of an epidemic as quickly as possible by isolating the suspected individuals before there is a possibility of contagion.

Open Air Treatment of Pulmonary Tuberculosis.

Millet, C. S. "The Night Air of New England in the Treatment of Consumption." *Maryland Medical Journal, Jan., 1900.*

This unpretentious little article makes most interesting reading and shows what good results may be obtained under apparently very unfavourable conditions, if the physician be in earnest and succeed in impressing his ideas on his patients.

Dr. Millet introduces his remarks on the open air treatment of consumption by a reference to the "national reputation for insalubrity" which the climate of New England enjoys, owing to the variability of the temperature and the prevalence of bleak east winds. The country

is flat and low-lying with a clayey subsoil. Consumption is rife and "during the past ten years has caused one-fourth of all the deaths in this community" (Brockton, Mass.) The writer mentions that he was induced to try the effect upon consumptive patients of sleeping out of doors, by reading how Detweiler compels his patients to remain out in their reclining chairs until ten o'clock at night. "Feeling convinced that the night time would be far better spent in bed I urged my patient to try sleeping out of doors." This patient had incipient pulmonary tuberculosis and had been recommended a change of climate by a consultant. From the last of June, 1898, he slept out of doors under no roof or awning for five months, excepting nine nights which were rainy. The improvement was immediate and marked. At the end of a month there was no fever, the cough and wheezing had almost disappeared, and at the end of four months he had gained twenty-two pounds. He took no medicine except nux vomica. The patient's home was twelve miles from the sea coast and the altitude a hundred feet above sea level. What is quite remarkable is that he worked in a shoe factory nine hours a day throughout his course of treatment. At night he wore a soft felt hat and a cotton nightshirt and was covered with the ordinary bedclothes. He usually went to bed at 9 p.m., because the sun awakened him early in the morning.

Dr. Millet gives notes of four cases of pulmonary tuberculosis, three of whom were working men, in all of whom sleeping out of doors was followed by arrest of the disease. It is a real pleasure to read the following note:—"Not one of these five cases of tuberculosis has taken a single dose of any cough mixture or sedative. Almost the only medicines have been nux vomica and occasionally a laxative." Eight hours of sleep in the open air were insisted upon.

Though not obliged to do so for reasons of health, Dr. Millet, unlike most doctors, has "taken his own medicine," sleeping out of doors, and speaks from personal experience of its refreshing effects. He rightly condemns the fear of "dampness" and "draughts." "Many times these patients have found their bed coverings and nightclothes wet with dew, and once in a while a summer's rain has disturbed their healthful slumbers, but with no harm beyond the necessity of drying the bedclothes before another bedtime."

In conclusion the esssentials of treatment are summarized as follows:

"(1) The patient having bought a clinical thermometer is taught how to use it and told to take his own temperature at 9 a.m., 4 and 8 p.m., and to make careful records for the physician's inspection when he makes his visit, which is usually twice a week. The one o'clock temperature if 99° F, or below, generally indicates that the patient need not be closely confined to his bed in the afternoon; but the eight

o'clock temperature will decide whether he has taken too much exercise or not. The rule is, rest in bed during the day long enough to keep the temperature below 99.5°, or better 99°. I am in the habit of telling these invalids that I don't like 100°, but am encouraged by anything below that.

(2) The patient is instructed to keep a record of the number of hours which he spends in the house, and to give good reasons for not having spent them out of doors.

(3) He is urged to eat all he can at the three ordinary meals. No hard and fast restrictions are placed upon the diet. Milk, eggs and vegetables are recommended, and the use of pastry and confectionery discouraged.

(4) All those who can spare the time are required to take a cold sponge bath in the morning and another bath at about 90° before going to bed."

The writer adds a word as to the necessity of paying attention to the nose and throat, correcting any abnormal conditions that may interfere with proper breathing or be the cause of an irritating cough.

The value of this instructive communication is materially enhanced by photographs of the bed platforms on which Dr. Millet's patients have spent their nights during the course of treatment. Such a method will commend itself to the vast majority of general practitioners, whose patients, as a rule, cannot afford to give up their work for any long period of time, much less bear the expense involved in removal to and prolonged sojourn in a suitable climatic environment. Dr. Millet has emphasized one of the facts that we know but often forget, that after all the cure of pulmonary tuberculosis mainly depends upon rest, a constant supply of fresh air, and superalimentation, and he deserves the thanks of the profession for showing in such an objective way how these measures may be carried out anywhere and by anybody.

Roentgen Rays.

Williams, Francis H. "Roentgen Ray Examinations in Diseases of the Thorax." *Yale Medical Journal, April, 1900.*

Williams gives his experience with the X-rays in the diagnosis of abnormal thoracic conditions during the last five years. More than four thousand examinations were made in both medical and surgical cases and no burn or inconvenience resulted in any case. For the internal organs, which are moving, the fluorescent screen is better than the photograph. The former has the additional advantage of allowing a simultaneous physical examination by the ordinary methods. The patient should be supported in a comfortable position, and should be so placed that it may be possible at subsequent examinations to bring the tube into exactly

the same position with reference to his body. This may be done by putting the patient upon a stretcher which is placed upon supports above the tube.

It is too early as yet to determine precisely the value of X-ray examinations in diseases of the chest, but in some cases they give information not afforded by other methods. For instance, in pneumonia we may find evidence of the disease which was not to be obtained from the history or physical signs. An example is cited of a case in which the symptoms suggested cerebro-spinal meningitis, and a careful examination by three physicians failed to detect anything abnormal in the lungs or heart. A subsequent examination with the X-rays showed an increased density of the upper right lobe and a shortened excursion of the diaphragm on that side. In a few days the temperature fell by crisis, though no physical signs had been found throughout the disease. Subsequent X-ray examinations showed improvement, and finally a clear lung, and in this way alone was the diagnosis established. In another instance a senile pneumonia was diagnosticated only by the use of the X-rays.

This method of examination is very useful in detecting aneurisms of the aorta, especially when the signs derived from physical examination are inconclusive or actually misleading. Three cases are cited; in one the trouble was thought to be stricture of the œsophagus, in the second pulmonary tuberculosis (on account of hæmoptysis), but an X-ray examination showed an aneurism in both cases. In a third case, in addition to an innominate aneurism made out by physical examination, the rays showed a small aneurism of the descending aorta.

The rays also serve to differentiate new growths from vascular tumours, though much experience may be required in some cases to do this.

In tuberculous disease of the lungs, the X-ray examination may afford evidence of very early involvement of the lung as shown by (1) a shortened excursion of the diaphragm, (2) the apex of the affected side darker than the other, (3) the heart a little to the affected side during full inspiration. The examination may be of use in three ways. It may draw attention to an abnormal condition in the lungs before the onset of any symptoms or before there are any well marked physical signs. It may aid in deciding whether the patient should leave home or not by indicating the extent of the disease, which is sometimes far greater than it seems to be by the signs afforded by percussion and auscultation. Again, repeated examinations may show whether the lungs are improving or not. (Cases are cited showing the value of the X-rays in these different respects).

In the determination of the size of the heart the X-rays are very useful giving more accurate results than percussion.

H. A. Lafleur.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Canadian Practitioner.

January, 1900.

1. Report of a Case of Brain Tumour. R. W. BRUCE SMITH.
2. Septicæmia. CHAS. A. PAGE.
3. The Interne Service in Modern Hospitals, A Comparison of the Canadian and American Systems. T. LEONARD VAUX.
4. The Chemical Rays of the Solar Spectrum as a Remedial Agent. GRAHAM CHAMBERS.

February, 1900.

5. Pregnancy and Labour Complicated by Tumours. A. A. MACDONALD.

March, 1900.

6. The Placental Inspection: Its Uncertainties and its Dangers. J. F. W. Ross.
7. Puerperal Septicæmia. ADAM H. WRIGHT.
8. A Case of Tubercular Peritonitis, Complicated by Insanity. THOMAS OVENS.

1. SMITH describes the symptoms of a case of glioma of the brain. At autopsy the tumour was found to be one and a quarter inches long by one inch in thickness, involving the greater extent of the right occipital lobe and extending over towards the right side, pressing on the lower parietal and middle temporal convolutions. The case had a somewhat unique history lasting four years and two months from the first symptoms, a slight paralysis of the left side, and of having an abatement of all the symptoms for a considerable period, during which he worked regularly. There had been absence of headache and vomiting, and no convulsions. The tumour seemed to have given rise to much pressure on the region of vision, and death was evidently due to coma in consequence of the gradual increase in the intracranial pressure.

2. PAGE reports a case of fatal septicæmia, the patient being a girl of eighteen, in whom an incision had been made for an imperforate hymen. On the third day after the operation she had a chill and the temperature ran up to 102°. Two weeks later she was admitted to

hospital, where she was treated with thorough local applications, and the use of antistreptococcus serum, and both the intracellular and intravenous injections of saline solution, but without avail. A bacteriological examination of the blood gave a pure culture of the staphlococcus albus, and the incisions made for the salines broke down and sloughed, showing the absolute lack of the physiological healing process.

5. Macdonald, in this paper, deals with the treatment of the new growths, chiefly ovarian tumours and fibroids of the uterus, which complicate pregnancy and labour.

6. Ross is convinced that it is impossible for any obstetrician to say positively that all the placenta has been expelled, from a mere inspection of it. Chloroform and the index finger are the two weapons with which the occurrence of septicæmia following miscarriage can be prevented. He is a strong advocate of the administration of an anæsthetic in every such case and a thorough inspection of the interior of the uterus with the finger, in the belief that prevention is better than cure. He further advocates as a routine practice in all cases of normal labour the introduction of the finger into the uterine cavity to ascertain that all the secundines had been removed. This is done, however, only on the condition that it carried out wih very careful attention to aseptic and antiseptic details.

7. Wright takes exception to the views expressed by Dr. Ross in the above paper as he believes that the advice to explore the uterus after every labour is wrong, and if generally acted on would cause incalculable harm; that it is contrary to the teaching and practice of all the most modern obstetricians and hospitals in the world. Such proceedings are on a par with those of the worst forms of meddlesome midwifery of the pre-antiseptic era. As to the treatment of the third stage of labour he advises the obstetrician not to introduce his hand into the uterus unless there is some sound reason for such procedure, as post-partum hæmorrhage, suspicion of retained placenta, etc. In all such cases the patient should be anæsthetized, the hand introduced and the contents removed. It is however a grave operation on account of the danger of introducing pathogenic germs or air, and he consequently avoids it when he can do so.

8. Ovens relates the history of a woman of 26, who shortly after her marriage began to show symptoms of tubercular peritonitis. During six months this condition continued, when she was taken ill with severe abdominal symptoms, and shortly afterwards began to show signs of acute mania. She was removed to the London Asylum, where, after a few days' observation, it was thought necessary to open the abdomen. All the pelvic organs and intestines were matted together, and the peritoneum was studded with miliary tubercles. As many

adhesions as possible were broken up, the cavity flushed with normal saline solution, and the wound closed. Three months later the patient was removed to her home, sane, and free from all her former symptoms. After fourteen months she was in excellent health and of sound mind.

The Canadian Journal of Medicine and Surgery.

January, 1900.

1. The History of Medicine. EZRA H. B. STAFFORD.
2. The Treatment of the Acute Digestive Disorders of Infancy. ANDREW R. GORDON.
3. Anæsthesia by Chloroform and Ether. WILLIAM B. JONES.
4. Case of Puerperal Sepsis Treated with Anti-Streptococcus Serum, with Notes. GEORGE T. MCKEOUGH.
5. The Hospital Room in each Dwelling. W. J. TELFER.

February, 1900.

6. Address in Surgery. W. B. COLEY.
7. The Relation of Insanity to Pelvic and other Lesions. A. T. HOBBS.
8. Extreme Emaciation in Hysteria, with notes of a Case. T. BEATH.
9. A New Epoch in Hospital Evolution. ERNEST HALL.
10. The Smallpox Outbreak in Essex. P. H. BRYCE.

March, 1900.

11. Address to the Association of Executive Health Officers of Ontario. J. J. CASSIDY.
12. On the Role of Primary and Secondary Osteoplastic Surgery in the Treatment of Complicated or Compound Fractures of the Extremities. THOMAS H. MANLEY.
13. An Experience in Formaldehyde Disinfection. F. MONTIZAMBERT.
14. Systematic Intra-Uterine Exploration after Expulsion of the Placenta. JOHN HUNTER.

2. GORDON discusses those acute attacks of digestive disturbances occurring in previously healthy infants. Such attacks are usually the result of the disturbance of the equilibrium between the digestive forces and the materials which they are supposed to digest. He urges the withholding of every kind of food, except water or water with a trace of common salt added, for twenty-four hours, or until the urgent symptoms have disappeared. After that rice, barley, arrowroot, toast, or albumen water may be administered. Small quantities of beef-juice or beef extracts may be added. Purgation, and purgation repeated again and again, is of essential importance. The return to the accustomed diet must be made with extreme caution.

3. Jones urges that a more thorough teaching of the administration of anæsthetics be given to students, and considers that the time is ripe for the employment of professional anæsthetists in our cities.

4. McKeough reports in detail the results of the use of antistreptococcus serum in a case of puerperal sepsis. Although the published reports of the use of the serum are most conflicting and, on the whole, not encouraging, yet in this case it was used with great advantage. Thirty c.c. were used in three doses, at intervals of about twelve hours on three different occasions, and on each occasion the temperature fell, the condition of the vagina so characteristic of puerperal infection, improved, the patient's general condition was much better, and after the last injection recovery ensued.

5. Telfer suggests that in all houses a room should be specially arranged, so that it could be entirely isolated from the rest of the house in time of sickness. The walls, ceiling, and furniture should be made of a material that could be readily rendered aseptic. He discusses the many advantages which such a hospital-room would afford.

6. Published in the September Number of this Journal.

7. Hobbs deals with the relation of insanity to diseases of the pelvic organs.

8. Beath relates the history of an interesting case of hysteria accompanied with great emaciation, which was completely cured by a course of six weeks' segregation, with massage and electricity.

9. Bryce states that from the study of the statistics of the recent outbreak of smallpox in Essex Co., four facts stand out prominently:— 1st. The practically absolute protection of a previous attack. 2nd. The practically absolute protection of a prior vaccination where a good cicatrix is present. 3rd. The power of a recent vaccination running concurrently in the system to greatly modify the severity of the disease. 4th. That a lymph of attenuated virulence, while producing in appearance a fairly successful vaccination, fails to be more than a partial protection although very recently performed. It does not seem to have done more than modify the severity of the disease.

13. Published in the October Number of this Journal.

14. Hunter advocates the same procedure as Ross does in the paper noted above.

Dominion Medical Monthly.

January, 1900.

1. An Eruptive Plague. John Coventry.

February, 1900.

2. The Treatment of Inebriety. J. McA. Dunsmore.

March, 1900.

3. Proceedings of the Toronto Clinical Society.

1. COVENTRY discussed the epidemic which recently occurred in Essex County, and is of the opinion that it was an attenuated form of smallpox, so benign in character, that it was only feebly contagious and was easily controlled by isolation and vaccination.

2. DUNSMORE describes the plan of treatment for inebriety followed in the Lakehurst Sanitarium at Oakville. Alcohol is gradually withdrawn, and the patient is treated with tonics. For sleeplessness, bromides or hyoscine are used. Tincture of capsicum has also given good results. Emphasis is laid on the use of moral tonics. All patients are put upon their honour and are not restricted in any way. They are at perfect freedom to come and go as they wish. Under the circumstance a man taking alcohol clandestinely would find himself regarded as a traitor to his trust.

The Canada Lancet.

January, 1900.

1. A Case of Interstitial Emphysema. HORACE C. WRINCH.

February, 1900.

2. Presidential Address, Toronto Medical Society. GILBERT GORDON.
3. A Case of Male Pseudo-Hermaphroditism. ERNEST HALL.

March, 1900.

4. Peptones in Typhoid Fever. FREDERICK FENTON.
5. Subcutaneous Abscesses in Connection with a Bacillus in the Circulating Blood. THOMAS BRADLEY.

1. WRINCH records his observations on a case of subcutaneous emphysema, and an advanced state of tuberculosis of the lungs. The patient was a well-developed male child six and a half months old. The emphysema appeared as a soft swelling above the clavicle on the right side of the neck, and spread over the body and greater part of the head. The child died on the sixth day. On opening the thorax air rushed out as soon as the left pleural cavity was perforated. On section the left lung was in a condition of miliary tuberculosis throughout. No cavities. The right lung was riddled with cavity formation in its upper and middle lobes, the pleura being greatly thickened over the cavity area. Bacilli were found present in immense numbers in the lungs. The cause of the emphysema was doubtful, for as the gas ceased to spread after death, and was not found in the liver, the possibility of the condition being due to the Bacillus Aerogenes Capsulatus was excluded.

3. Hall describes a case of male pseudo-hermaphroditism. The patient was a healthy-looking well-developed child of fourteen, and came under his care for double inguinal hernia. Labia majora were fully developed, and the clitoris was enormously hypertrophied with well formed glans, which was continuous with the labia minora. A slight groove with elevations on either side was continuous from the frenum for three-quarters of an inch to the meatus urinarius which was well formed and normal in appearance; directly below this was the opening of the vagina with well formed carunculæ. The vagina was but an inch and a half deep, ending in a blind cul-de-sac. Upon the examination of the pelvis, neither uterus, tubes, or ovaries could be determined. The body was of the masculine type, the thighs alone bearing some resemblance to the female; hands were large but the feet were small; breasts undeveloped. As the child had been educated as a female, it was decided since it was practically impossible to obtain functionable male organs, that social and domestic conditions be allowed precedence. The canal on either side was opened, and after the testicles were removed, was treated as an ordinary case of hernia. At a subsequent operation the clitoris was removed and the upper part of the labia minora united, giving the parts a distinctly feminine appearance.

4. Fenton publishes the notes of two cases of typhoid fever in which he used peptone feeding with marked benefit, as owing to the severe vomiting no food could be taken by the mouth. He prepared the peptone by finely mincing the whites of ten hard-boiled eggs and mixing them with a pint of artificial gastric juice made of pepsin and hydrochloric acid in due proportions, and kept at body temperature in a water bath for some hours until no trace of the egg was left on inspection. He points out that the constituents of enemata should be essentially nitrogenous as the large intestine is adapted only for the adsorption of water and substances in solution. For this reason albumen which has been precipitated, as in hard-boiled egg, is the best, for its complete solution by pepsin can be observed.

5. Bradley relates the history of a man of 21, who had suffered for ten years from inflammatory swellings which broke down into subcutaneous abscesses. From the blood of this patient he cultivated an organism which acted differently from any bacillus, that has been described, occurring under similar conditions or otherwise.

The Maritime Medical News.

January, 1900.

1. Asthma and its Treatment. Murdoch Chisolm.
2. Prostatic Affection in Young Men. James Ross.

3. The Treatment of Erysipelas by Marmoreck's Serum. A. DE MONTIGNY.

February, 1900.

4. Hygiene for School Children. M. CLARA OLDING.

5. Senility. STEWART SKINNER.

1. CHISOLM attaches more importance to the prevention of the paroxysms of asthma than to its relief, and he therefore prescribes alternatives rather than antispasmodics. The alteratives that are of the most value are iodine and arsenic in any of their compounds. He prefers the ammonium salt and the syrup of hydriodic acid. As auxilliaries it is well to combine or alternate with them remedies which act upon the bronchial cells, such as allium, senega, blood root, copaiba, and the balsams.

2. Ross discusses the inflammation of the prostate that is frequently met with in young men, and of which the most important cause is gonorrhœa. The treatment should be the local applications of solutions of nitrate of silver, in various strengths, or thallin sulphate. In chronic cases massage of the prostate through the rectum is of value. He advocates the use of ergotin combined with nux vomica as a prostatic tonic.

3. Published in the November Number of this JOURNAL.

4. OLDING points out many of the defects in our system of education, and gives some excellent advice as to the way they should be remedied.

5. SKINNER deals with the various phenomena observed in the aged.

Kingston Medical Quarterly.

January, 1900.

1. Ectopia Vesicæ. D. E. MUNDELL.

2. Colles' Fracture Ending in Litigation. J. M. CONERTY.

3. A Method for the Detection and Estimation of Sugar in the Urine. A. R. ELLIOTT.

4. Cancer. E. KIDD.

5. Antistreptococcus Serum in the Treatment of Puerperal Infection. R. W. GARRETT.

6. The Cure of Stammering and Stuttering. J. C. CONNELL.

7. Early Diagnosis of Tubercular and other Lessions by Rontgen Ray. JAMES THIRD.

8. A Case of Heterotaxia. P. M. CAMPBELL.

1. MUNDELL thought, that in view of the varied objections to the present status of reparative surgery of the extrophied bladder, it would be possible to replace the skin flap of Wood, or the bowel flap of Rut-

kowski, with a flap of normal bladder tissue. He undertook some experiments on animals, to ascertain whether it would be feasible to transplant the bladder of one animal into the body of another. The experiments were successful and he suggests that some such procedure might well be followed in cases of ectopia vesicæ.

2. Published in the January Number of this JOURNAL.

3. ELLIOTT describes a test for sugar in the urine, which he claims is superior in accuracy and convenience to any of the other copper tests.

4. KIDD in an interesting paper, reviews the knowledge which we possess at the present time concerning cancer.

5. GARRETT reviews the recent literature concerning the use of the antistreptococcus serum in the treatment of puerperal infection.

6. CONNELL considers that the proper line of treatment for stammering and stuttering is gymnastic and didactic; gymnastic to invigorate the entire system and the respiratory organs in particular, didactic, to re-establish by pedagogic methods the correct co-ordination of the function of respiration, phonation and articulation. Treatment should always begin with exercises in breathing, then follows vocal gymnastics, then cases it is well to place the patient under the care of a specialist in voice cases it is well to place the patient under the case of a specialist in voice troubles. Many persons who are intelligent and persevering do not need the aid of a tutor. If they are taught the nature of the defect and the principles involved in its mastery, they will acquire the new habit of speaking in the normal way by dint of intelligent and persevering practice.

7. THIRD discusses the use of the X-rays in the diagnosis of tuberculosis, and enumerates the work done in the Kingston Hospital during the last three months. Of fifty-two cases of suspected disease thirteen were diagnosed tuberculosis, seven in the incipient stage, and six in the advanced stage. Of the seven in the early stage the diagnosis was confirmed by bacteriological examination in all but one. The sputum in that case contained no bacilli. Of the remaining thirty-nine there were found four only whose appearance suggested tuberculosis. The sputum of these was examined with negative results. On several occasions the X-ray examination of the chest sounded the warning note when auscultation and percussion have indicated no departure from the normal. The progress, great as it is, must only be considered a reconnaissance.

8. CAMPBELL records an interesting case of this anomaly.

Canada Medical Record.

February, 1900.

1. The reflex Symptoms of Retroversion of the Uterus. A. LAPTHORN SMITH.

La Clinique.

Janvier 1900.

1. De la Micturition Fréquente. ADELSTAN DE MONTIGNY.

Février 1900.

2. Ostéo-péristite Syphilitique Localisée à l'Apophyse Mastoïde. PAUL VIOLLET.

Mars 1900.

3. De l'Electricité dans le Diagnostic, le Pronostic et le Traitement de la Paralysie Infantile. H. LEBON.

1. DE MONTIGNY treats of the frequency of micturition so often met with, and describes the various symptoms that are to be inquired about, so that an exact diagnosis may be arrived at in certain cases, and a probable one in others.

Le Bulletin Medicale de Quebec.

Janvier 1900.

1. Ligature des Artères de l'Utérus pour Cancer Inopérable de cet Organe. M. J. AHERNE.
2. De l'Occlusion Intestinale et de son Traitement. S. BOLDUC.

Février 1900.

3. Un Cas de Pouls Lent Permanent. ARTHUR ROUSSEAU.
4. Un Cas de Dystocie. LEON COTE.

Mars 1900.

5. Les Maladies sans Nome. F.-X. JULES DORION.

1. AHERNE reports a case of a woman, aged 39, in whom he ligated the uterine arteries for the relief of free hæmorrhage in inoperable cancer of the uterus, with the result that the hæmorrhage was checked for six weeks, but it again started and she died shortly afterwards.

2. BOLDUC records three observations which convince him of the value of copious injections of hot water into the bowel in cases of intestinal obstruction. It is the most rational treatment and should be carried out before having recourse to laparotomy.

3. ROUSSEAU reports the history of a man whose pulse beat from 18 to 28 times a minute. The man was first seen after having fallen on his head and in a comatose state. No previous history could be obtained. He was subject to syncopal and epileptiform attacks. His urine contained albumen.

La Revue Medicale.

No 29. Janvier 17 1900.

Coq-à-l'âne Médicaux.

Nos 30 et 31. Janvier 24 et 31 1900.

1. La Faculté de Médecine de Bruxelles. JEHIN-PRUME.

No 32. Février 7 1900.

2. Les Maladies Infectieuses:—Diphtérie.

No 33. Février 14 1900.

Revue des Journaux.

No 34. Février 21 1900.

2. Les Maladies Infectieuses:—Diphterie.

No 35. Février 28 1900.

Coq-à-l'âne Médicaux.

No 36. Mars 7 1900.

3. La Déontologie en Gynécologie et Sujects Collatéraux. M. T. BRENNAN.

No 37. Mars 14 1900.

Coq-à-l'âne Médicaux.

No 38. Mars 21 1900.

4. Kyste du Mesentere-Hematome de Trompe Droit. M. T. BRENNAN.

No 39. Mars 28 1900.

Coq-à-l'âne Médicaux.

Reviews and Notices of Books.

Essentials of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A.M., M.D., Instructor of Physical Diagnosis in Rush Medical College; Attending Physician to the Central Free Dispensary, Department of Laryngology, Rhinology and Diseases of the Chest. Third Edition, Revised and Enlarged. Philadelphia, W. B. Saunders, 1899. Price, $1.25.

The third edition of this little work on physical diagnosis differs but little from the second which has been already noticed in these columns. The author has adhered to the original arrangement making use of a large number of different styles of type for the headings in order to reduce the whole book to tabular form. While this in some instances is a help, in others again the large number of subdivisions causes confusion, and it would seem better to have simplified the tables so as to give a comprehensive view of the subect.

An American Text-Book of Surgery for Practitioners and Students. By Phineas S. Conner, M.D., Frederick S. Dennis, M.D., William W. Keen, M.D., Charles B. Nancrede, M.D., Roswell Park, M.D., Lewis S. Pilcher, M.D., Nicholas Senn, M.D., Francis J. Shepherd, M.D., Lewis A. Stimson, M.D., J. Collis Warren, M.D., and J. William White, M.D. Edited by W. W. Keen, M.D., LL.D., and J. William White, M.D., Ph.D. Third Edition. Philadelphia, W. B. Saunders, 1899. Canadian Agents, J. A. Carveth & Co., Toronto. Price $7.00.

The popularity of this text-book is amply shown by the fact that it has now entered its third edition. Owing to the careful supervision of the editors and to the fact that all the proof sheets are submitted to each author for criticism and revision, a uniformity has been secured which is often lacking in works which are written by many contributors. By this means also repetition is avoided.

The recent advances in surgery are as fully dealt with in this edition as is compatible with its production in one volume. Amongst these may be mentioned: the forcible straightening of the spine in Pott's disease; the surgery of typhoid fever; the use of dry heat at high temperatures; new methods of operating on the intestines, etc.

The surgery of gastric ulcer, a disease which causes so large a number of deaths annually, might have been dealt with more fully. It is a subject which has been attracting considerable attention of late and the

results so far are, as a rule, satisfactory. The article on appendicitis has been enlarged and deals very fully with this important subject. Taken all in all it is perhaps one of the best articles which has yet appeared. A plate representing various conditions of morbid appendices adds greatly to its value.

In all respects this text-book of surgery is one of which the authors may well be proud. The plates and text maintain the high standard of the earlier editions.

E. J. S.

Transactions of the American Ophthalmological Society. Thirty-fifth Annual Meeting, New London, Conn., 1899. Hartford, published by the Society, 1899.

The proceedings of the American Ophthalmological Society for 1899 are not quite as voluminous as previous numbers, but they certainly do not lack in interest.

Among new instruments exhibited, is a reflecting phorometer by Dr. Verhœff, which would seem to assist more clearly in defining the torsion movements of the eyes. Another was a double needle to facilitate the operation of capsulotomy. Dr. Buller invented the latter instrument.

Of the papers read, the most interesting were:—"Retinitis albuminurica as a factor in secondary glaucoma," by Dr. C. S. Bull; "Primary tumours of the optic nerve (with sections)," by Dr. Buller; "Spontaneous rupture of the eyeball in acute glaucoma," by Dr. Milliken; and "Is there a hypermetropia acquisita?" by Dr. Randall.

J. W. S.

International Clinics; A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology; and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the Leading Medical Colleges in the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M.D. Volume IV., Ninth Series, 1900. Philadelphia, J. B. Lippincott Company, 1900. Canadian Agent, Charles G. Roberts, Montreal.

The concluding volume of the ninth series International Clinics contains over 300 pages of reading matter with an index for the volume and general index for the whole series. As one would expect in a volume embracing clinical lectures from a large number of the leading schools of the medical world, the subjects discussed are those in great part that one finds occupying the pages of current medical journals, while the promise of the publishers, in the prospectus issued at the beginning of

the series, to furnish subscribers with a larger number of short, pithy articles has been fulfilled in this as in the preceding volumes for the present year.

While it is impossible to refer to all the thirty-seven papers contained in this volume, the following may be pointed out as of more than usual interest and value.

The method of treatment by subconjunctival injections in certain diseases of the eye, now receiving so much attention among ophthalmologists, is described by Dunbar Roy. A most valuable paper for the country practitioner who is unable to avail himself of the advantages of a large hospital for those of his patients demanding the cold bath treatment, is Alfred C. Haven's lecture on "Hydrotherapy in the Homes of the Poor." The plan described is the use of three yards of ordinary, table oilcloth, made into a bath by being slung from the head and foot of the bedstead by means of straps made of canvas. It is both simple and inexpensive.

Frederick P. Henry, of Philadelphia, describes the treatment of pneumonia by hypodermoclysis in an article illustrated by half-a-dozen charts showing the temperature curve and pulse rate in some of the twelve cases reported. A pint of salt solution (68 grains to the pint) was used once a day, and several of seemingly hopeless cases were successfully treated. The notable feature about the cases is that defervescence occurs by lysis rather than crisis. Hektoen of Chicago, in a very interesting article, discusses the "General Etiology of Actinomycosis," showing that in the vast majority of reported cases the infection could be directly or by inference traced to foreign bodies of vegetable nature, especially the beard of barley and other cereals.

A lecture upon "Defects of Speech," by Makuen of Philadelphia, forms a valuable addition to the volume as treating of a condition about which the practitioner is frequently consulted, but is unable to obtain any information from the ordinary text-books. Hallopeau, of Paris, furnishes a lecture on "Mycosis Fungoides."

Surgical Pathology and Therapeutics. By John Collins Warren, M.D., LL.D., Professor of Surgery in Harvard University, Surgeon to the Massachusetts General Hospital. Illustrated. Second Edition with an Appendix. Philadelphia, W. B. Saunders, 1900. Canadian Agents, J. A. Carveth & Co. Price, $5.00.

"In the second edition of this book the attempt has been made to embody all the important changes in a new appendix which replaces the old one and a chapter on Antiseptic Surgery."

The main body of the book is altered very little if any, and it need only be said that the matter therein contained is well arranged and

illustrated, and that the doctrines of surgical pathology are clearly expressed. It is a standard work that can be relied upon.

On turning to the appendix, one finds in the beginning a chapter on the somewhat new and certainly important subject, "Blood Examination as an Aid to Surgical Diagnosis." The author does not attempt to teach the details of the method employed in this examination but rather "what laboratory methods can be expected to yield in positive results. Practically no surgical disease presents pathognomonic blood conditions." A great deal of information, however, can be obtained in certain conditions. The indications which might prove helpful in differential diagnosis in inflammatory conditions, typhoid fever, appendicitis, and hæmorrhage, are stated. By carrying out a systematic examination of the blood much light, amounting in some puzzling cases to a diagnosis, may be made; for instance, suspected perforation of the intestine in typhoid, perforation in appendicitis, or the first sign of the pocketing of pus.

Of the chemical constitutents of the blood, sugar, present in normal blood, is much increased in certain conditions the chief of which is carcinoma. Tuberculosis and syphilis, though showing an increase, are so far below the amount found in cancer that usually they do not cause confusion.

A sufficient space is given to the prevailing method of skin bacteriology and to the flora found pretty constantly in certain parts. In discussing the different methods of skin disinfection, including the preparation of the surgeon's hands, one finds no mention of that most excellent method, the use of pure alcohol. Bacteriology occupies a very considerable part of the appendix and the bacteriology of the mouth, nose, eyes, gall-bladder, urethra, ureters, etc., are considered in detail. Most interesting in connection with the bacteriology of peritonitis are the reports of the investigations of Muscatello and Askanazy on the important role of the lymphatics in peritonitis.

The book closes with a short chapter on sero-therapy in tetanus, tuberculosis and syphilis.

G. E. A.

A Text-book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine in the Medico-Chirurgical College, Philadelphia, &c. Illustrated. Third Edition, Revised. Philadelphia, W. B. Saunders, 1899. Canadian Agents, J. A. Carveth and Company, Toronto. Price, $5.50.

The third edition of this work follows the second at an interval of less than a year. While the second edition was practically the same as

the first which appeared in 1898, the present one has been extensively revised and a number of articles rewritten, while Glandular Fever, Ether Pneumonia, Splenic Anæmia, Meralgia Paræsthetica, and Periodic Paralysis have been added as new subjects. A page is devoted to Glandular Fever, the description of the disease being based upon West's epidemic and Dawson Williams' article in his recently issued text-book of diseases of children. Ether-pneumonia is introduced as a subdivision of lobar pneumonia under the heading of "clinical varieties and anomalous types." We very much question the wisdom of placing ether pneumonia as one of the clinical varieties of lobar pneumonia, both from the absence of any symptoms characteristic of a pneumonia following ether anæsthesia which are not present in a frank case of the type and from the fact that it has not been shown that the pneumonia following ether narcosis is in any direct way attributable to the effects of ether vapour or of the state of anæsthesia. Thus the author enumerates as the "causes" 80 per cent. in the winter and spring, "catching cold" from exposure during a protracted operation, bronchitis, etc., during the time of administration, and dried secretions or incustrations of foreign matter drawn downwards into the lungs. Of all these the latter only has any direct connection with the anæsthesia and not with ether anæsthesia alone. It is also a septic pneumonia as often lobular as lobar and not as the author states in his definition of lobar pneumonia :—"An acute infectious disease caused by the micrococcus lanceolatus." The matter would be hardly worth referring to were it not for the harm done by adding to the fears of timid people. It would seem to us more reasonable to include ether anæsthesia as one of the predisposing causes of pneumonia than to place it among the clinical varieties and so add to the fears of what is acknowledged the safest anæsthetic.

Half a page each is devoted to splenic anæmia, periodic paralysis and meralgia paræsthetica.

A Practical Treatise on Diseases of the Skin for the Use of Students and Practitioners. By James Nevins Hyde, A.M., M.D., Professor of Skin, Genito-Urinary and Venereal Diseases, Rush Medical College, Chicago, &c., and Frank Hugh Montgomery, M.D., Assistant Professor of Skin, Genito-Urinary and Venereal Diseases, Rush Medical College, &c. Fifth and Revised Edition. Illustrated with 111 engravings and 24 plates in colours and monochrome. Lea Brothers & Co., Philadelphia and New York, 1900.

The present, the fifth edition, has followed within two years of its predecessor and well illustrates the popularity of this excellent work. It

is so well known that only those features which have been added to the present edition need be referred to here.

The most interesting addition is the chapter on Blastomycetic Dermatitis, a disease which has been extensively studied since Gilchrist published his study of a case in the Journal of *Experimental Medicine*. The liability of the disease to be mistaken for lupus or tertiary ulcerating syphilide make it of peculiar interest and the fact that iodide of potassium causes a complete or partial resolution of the lesions makes the diagnosis from syphilis difficult, and an absolute diagnosis can only be arrived at by finding the specific organism in the lesions. A plate showing the appearance of the disease on the hand of one of the author's cases illustrates and one regrets that there is not also a plate illustrating the appearance of the organism under the microscope.

The book is divided in the following manner. Opening with 50 pages descriptive of the anatomy and physiology of the skin, a short chapter each is devoted to general symptomatology, etiology, diagnosis, prognosis and therapeutics. Then follows the descriptions of the individual diseases, the classification followed being that of the American Dermatological Association. The title Herpes Iris is introduced in two places, first under erythema multiforme, and again later as a separate disease between herpes simplex and zoster. The author looks upon it as being on the border lines between the erythema and herpes. Dermatitis exfoliativa, pityriasis rubra and pityriasis rubra pilaris are distinguished as distinct diseases and described separately, although the author refers to the difficulty of drawing hard and fast lines between the two former on the one hand and the two latter on the other. Eczema seborrhoicum is also given a separate place immediately following eczema in the classification. The old term of Acne Rosacea is still retained for cases in which the lesions are mainly acneiform while hypertrophic cases are described as Rosacea in another section of the book.

G. G. C.

Manual of Pathology. By Joseph Coats, M.D., Late Professor of Pathology in the University of Glasgow. Fourth Edition. Revised throughout by Lewis Sutherland, M.B., Professor of Pathology in University of St. Andrews. Pp. 1132; 490 illustrations. Longmans, Green & Co., 1900.

Coats' pathology has always occupied a position of its own among English text-books upon the subject, it differs from most works of its kind in the constant endeavour that is manifest throughout to collate pathological conditions with clinical experience and thus as Sir W. Gairdner remarks in his prefatory note, "it is found full of suggestions

for the busy man in the routine of daily practice." But also as Gairdner implies, the late Dr. Coats' mind fell short of the highest type of creative originality. And reading this new edition one cannot but feel that, more especially the earlier part upon general pathology, is to say the least common-place and wanting in an appreciation of recent literature and of the light thrown upon pathological problems by recent research. It is when we come to the chapters on special pathology that we reach the most valuable portion of the volume. Here, stated simply and broadly, one obtains an excellent first idea of both the gross and histological appearance of the various organs in various conditions of disease, with frequent indication of the mutual bearing of symptoms and lesions the one to the other. If we miss references here to more recent observations, this is, it may be, to be explained by the long illness and death of the author prior to the publication of the work. But the careful description of the gross appearances of organs and of the different appearances which should be present in different organs at different stages of disease is of permanent value, and very largely makes up for any deficiency in the other respect. These chapters of Coats', though not so full, are capable of being to the English medical student what Orth's Pathologisches Diagnostik is to the German. The added illustrations are a great improvement upon the old, and indeed, we would recommend that in any future edition all of the old illustrations be completely replaced by something on a larger and clearer scale.

J. G. A.

THE SURGICAL DISEASES OF THE GENITO-URINARY TRACT: VENEREAL AND SEXUAL DISEASES. A Text-book for Students and Practitioners. By G. FRANK LYDSTON, M.D., Professor of Surgical Diseases of the Genito-Urinary Organs and Syphilogy in the Medical Department of the State University of Illinois. Illustrated with 235 Engravings. Philadelphia, New York and Chicago, The F. A. Davis Company, 1899. Price, $5.00.

The author covers a great deal of ground in one volume of about a thousand pages. The book is generally in accord with the most advanced thought and teaching on the subject treated.

In reading the chapter on the anatomy of the parts one is struck by some of the terms used. For instance, a good deal is said concerning "Buck's fascia," which seems to have much the same distribution as that generally known as Colles' fascia. Again, the author does not seem to be quite in accord with the teachings of some of the leading bacteriologists and shows a tendency to assign a good deal of etiological power to filth and chemical products in the causation of conditions generally ascribed to micro-organisms and their toxic products.

In the treatment of gonorrhœa the value of urethral irrigations is fully set forth and at the same time due consideration is given to the use of the injections for patients who "cannot afford the time and money required for systematic irrigation."

A strong plea is set forth for the earlier surgical treatment of enlarged, hypertrophied prostates, before the secondary, pathological developments have rendered the patients unfit to undergo any kind of operative treatment. The plea will be more opportune when better surgical methods of dealing with enlarged prostates have been evolved.

In speaking of urinary calculus the author says :—"(1) Lithotomy seems still the standard operation in children, litholapaxy being indicated only exceptionally. (2) Litholapaxy is to be the rule in adults the cutting operation being performed only when the crushing operation is impracticable. (3) Stones above an inch and a half in diameter, very hard stones, stones with foreign bodies for nuclei, most cases of multiple calculi, cases with complicating strictures and severe bladder and prostatic or renal disease, requires lithotomy, preferably the suprapubic operation. Litholapaxy gives the best results in old men in whom the stone is accessible and the bladder and kidneys in fair condition." The book is a credit to the author who has decided opinions and can express them.

G. E. A.

Operative Surgery. By Joseph D. Bryant, M.D., Professor of the Principles and Practice of Surgery, University and Bellevue Hospital Medical College; Visiting Surgeon to Bellevue and St. Vincent's Hospitals; Consulting Surgeon to the Hospital for Ruptured and Crippled, Woman's Hospital, and Manhattan State Hospital for the Insane. Vol. I. General Principles; Anæsthetics; Antiseptics; Control of Hæmorrhage; Treatment of Operation Wounds; Ligature of Arteries; Operations on Veins, Capillaries, Nervous System, Tendons, Ligaments, Fasciæ, Muscles, Bursæ and Bones; Amputations; Deformities; Plastic Surgery. 749 Illustrations. New York, D. Appleton and Company, 1899.

This is a third edition, the second appearing in 1886. The present volume is well up to date, the letter press, clear, the illustrations are wonderfully clear and materially helpful. The author goes sufficiently into detail to make even the small points clear. The chapter devoted to the control of hæmorrhage is, as it should be, very full and the different methods of dealing with hæmorrhage fully described and illustrated.

The chapter on excision and amputation is increased in value by the introduction of an anatomy of the parts. Illustrations of cross sections

remind the reader of posibly forgotten points in the relations of the parts.

A very good description is given of some of the most commonly used methods for disinfecting the hands of the operator and the field of operation.

The volume closes with one of the fullest and clearest chapters on plastic surgery, particularly of the face, nose and mouth, that has yet appeared in English. Some of these operations are sometimes difficult to understand, but Dr. Bryant, by means of his beautiful illustrations, has made them so clear that this difficulty is removed. The book altogether is one that can be most confidently recommended.

G. E. A.

BACTERIOLOGY IN MEDICINE AND SURGERY: A Practical Manual for Physicians, Health Officers and Students. By WM. HALLOCK PARK, M.D., Associate Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical School and Assistant Director of the Research Bacteriological Laboratories of the Department of Health, City of New York. Assisted by A. R. Guerard, M.D., Assistant Bacteriologist, Department of Health, City of New York. Small 8vo., 693 pp., 87 engravings and ? coloured plates. New York and Philadelphia, Lea Bros. & Co. Price $3.00.

It may be confessed freely that upon first taking up this work and reading the first chapter or two, the impression given was that Dr. Park had but produced a new work in a field already well covered. For example, the introductory chapter upon the history of bacteria and the next upon the general characteristics of bacteria are very trite and in no sense in advance of other manuals. But further reading greatly alters one's estimation of the work and this little book of close upon 700 pages fills a very distinct gap. None of the ordinary text books in our language take up the subject of bacteriology so thoroughly and so soundly as does this from the point of view of the hygienist and public health officer. And as might be expected, from Dr. Park's long association with the Department of Health of the City of New York, the work contains admirable chapters upon infection, destruction of bacteria by various means and disinfection and sterilization in general, while in dealing with the individual pathogenic bacteria, as for example with the bacillus of tuberculosis and the bacillus of diphtheria, one recognizes throughout the hand of an authority.

We have in reading through the work noticed a few printer's errors, thus on page 62 "obligatory anærobes" should be "obligatory ærobes." In speaking of the fermentation test we should like to see Durham's Modification of the Fermentation Tube recommended in place of or

along with Theobald Smith's; the mortality among Eichhorn's bent tubes in sterilization and handling is so considerable that the method of placing an inverted test tube inside the other is, for practical purposes, distinctly preferable. On page 54 there is a familiar mis-statement, or more correctly, imperfect statement, namely, "that the majority (of bacteria) absolutely require oxygen for their growth"—*all* bacteria require oxygen for their growth, but not all require *free* oxygen. On the whole, however, the work is correct and very well up-to-date. It is pleasant to see that in the appendix there is a brief description of certain pathogenic organisms which are not bacteria, including the actinomyces group, the plasmodium malariæ and the amœba coli. It is a great mistake that in consequuence purely of the secondary consideration of terminology, the ordinary bacteriological text book in general passes these over, or at least passes over the minute animal forms. As I say this is purely a question of terminology, for the ordinary bacteriologist has to deal with these forms, his study being not that of bacteria alone but of all minute living forms or microbes. And in consequence it is, I think, essential that in any text book of medical bacteriology which pretends to be practical, these should be dealt with.

J. G. A.

The International Text-book of Surgery by American and British Authors. Edited by J. Collis Warren, M.D., LL.D., Professor of Surgery in Harvard Medical School; Surgeon to the Massachusetts General Hospital; and A. Pearce Gould, M.S., F.R.C.S., Surgeon to Middlesex Hospital; Lecturer on Practical Surgery and Teacher of Operative Surgery, Middlesex Hospital Medical School; Member of the Court of Examiners of the Royal College of Surgeons, England. Volume 1: General and Operative Surgery. With 458 illustrations in the text and 9 full-page plates in colours. Philadelphia, W. B. Saunders, 1899. Canadian Agents, J. A. Carveth & Company, Toronto.

The first is a large volume of nearly 950 pages devoted chiefly to general surgery, the various branches of special surgery being reserved, according to the announcement, for the second volume.

The editors have associated with them such men as Golding, Bird, Bradford, Cabot, Watson Cheyne, DaCosta, McBurney, Parker, Pilcher, Warbasse and many others, each standing high in his department. One opens such a book with great expectations and happily in this instance one is not disappointed.

Chapter I. deals with Surgical Bacteriology in clear and concise terms, in fact a full statement of the bacteriology of the day is given

in 26 pages. Inflammation is divided into simple and infective. So long as the term inflammation is used to express the changes which take place in the tissues as the result of trauma, as for example, those which follow a simple fracture, and which clinically are changes which result in repair, the division is probably the best that could be adopted. The course of infective inflammation is clearly shown and well illustrated.

A most interesting chapter is that on the Surgical Pathology of the Blood. This subject is bound to receive considerable attention in the future. The condition of the blood in shock, malignant disease and in infective conditions, is given so far as is known. The importance of examining the blood as a means of diagnosis is emphasized and a very full statement made of the conditions under which leucocytosis may be expected to obtain. In speaking of the bacteriology of the blood in pyœæmia and septicæmia it is stated that "not in all cases and of the severest type show any bacteria in the peripheral circulation. The presence of the streptococcus or the golden staphylococcus is almost always equivalent to a fatal prognosis."

The section dealing with wounds, burns and scalds is satisfactory as a rule, but one finds no mention of some reagents now being used with some considerable success, for instance, picric acid in burns. There is a brief chapter on the effects of lightning, but none on the destruction of tissue from contact with heavily charged electric wires.

The chapters devoted to Fractures and Dislocations are particularly well written and well illustrated. The light or rather the shadow thrown on these injuries by the use of Roentgen's discovery is made use of to good advantage. The treatment of fractures is in accord with the most modern views and due consideration is given to the ambulant method.

Altogether, the book is a credit to both authors and publishers and is one of the best that has been issued during the year.

G. E. A.

Volume II.—Regional Surgery.

The second volume opens with a weak and imperfect description of the congenital deformities of the lips and mouth. The subjects of harelip and cleft palate are poorly illustrated, and many of the operations performed for their relief are given imperfectly or not at all, while no mention is made of the advantage of the Trendelenburg position in operations about the lips and palate.

This is followed by most interesting, well illustrated, and well written chapters on Diseases of the Jaws and Gums, Pharynx and Tonsils, Surgery of the Nose, Surgery of the Neck, and Surgery of the Œsophagus.

The chapter on the Surgery of the Throat is very good. It includes description of the method of entering the posterior mediastinum for the evacuation of collections of pus or the removal of foreign bodies from the œsophagus or bronchi after all other methods have failed. There are two good plates illustrative of the procedure by Bryant.

Surgery of the Breast receives the attention which it merits, including some good plates showing the arrangement of the lymphatics by Sappey. The technique of Abdominal Surgery, the Diagnosis of Abdominal Diseases, Peritonitis, Acute Intestinal Obstruction, the Surgery of the Stomach and Intestines and the chapter on Appendicitis, are all most admirable. Too much can hardly be said in commendation concerning the surgery of these important regions. Hernia is most ably treated, preference being given to Bassini's operation for radical cure.

In turning to those paragraphs dealing with Cancer of the Rectum one is forced to criticize unfavourably the statement that, "in the vast majority of cases the treatment of cancer of the rectum is of necessity restricted to palliative measures." It does not ring the right note. Cancer of the rectum is not usually a very rapidly growing thing, nor very prone to recur locally. Early diagnosis and thorough removal may accomplish even more here than in other regions. The operation described for excision of the rectum is the old one for disease low down, modified somewhat by Cripps. Kraski's method is briefly given in fine print and no mention at all is made of the great advances in this field since Kraski noted in Volkman's Klinik that the sacral canal could be opened with impunity.

Take it altogether, the International Text-book of Surgery is a most valuable addition to surgical literature and worthy of the greatest confidence.

G. E. A.

Society Proceedings.

ANNUAL MEETING OF THE SOCIETY OF AMERICAN PHYSICIANS.

The Society of American Physicians opened with an address by Dr. Janeway, who was followed by Dr. J. B. Herrick on

Notes on Diabetes.

referring to a low specific gravity at certain periods in diabetes and to the presence of casts preceding coma. Cases of low specific gravity are occasionally seen and a case of the writer's was as low as 1004, whilst cases are recorded of 1002 or 1003. Low specific gravity oftens accompanies diabetes complicated by interstitial nephritis and it may also be present as a temporary phenomenon from exhaustion, or from the ingestion of large quantities of fluid. The practical inference is that the chemical tests for sugar should not be omitted even with very low specific gravities.

Another interesting observation is the presence of casts preceding the onset of diabetic coma. The urinary sediment consists almost exclusively of enormous numbers of broad, finely granular casts. There may be albumen but its quantity bears no relationship to the number of casts. In cases where recovery takes place the casts disappear. Finding casts may confirm the suspicion of the onset of diabetic coma.

Infrequency of Infectious Disease in the First Year of Life.

A. C. Abbott called attention to the Infrequency of Infectious Disease in the First Year of Life, supporting his statement by statistics of the Registrars-General of Great Britain and the United States. Ehrlich has shown that suckling animals, whose mothers are strongly immunized, are themselves immune. Applying this hypothesis the writer suggests that an immunizing substance is secreted in human milk which protects the nursing infant. This hypothesis assumes that the mothers themselves have been rendered immune by previous attacks of infectious disease. In support of this view it is interesting to note that the number of infectious cases in infants in the first year increases with age, or in other words, during the later months when nursing is often given up, the infectious diseases are more common.

Four Cases of Recurrent Vomiting in Children.

J. P. C. Griffith reported Four Cases of Recurrent Vomiting in Children and elicited considerable discussion. The attacks are marked by incessant, violent vomiting, coming on without apparent cause, accompanied by constipation, which is sometimes so severe as to stimulate obstruction ; there is great restlessness, thirst, sighing respiration and marked prostration. Although occasionally terminating fatally, recovery is the rule, even when death appears imminent from exhaustion.

The attacks occur at irregular intervals of from three weeks to sixteen months, and last from two to eight days. Albumin and casts are absent from the urine until a late stage when they may appear as a terminal phenomenon. The attacks of vomiting are best explained as a neurosis with a toxic origin and are an effort at elimination. Morphine hypodermically checked the vomiting in one case but failed in two others.

Dr. Stockton stated that the vomit in these cases was pure gastric juice ; as soon as the excess of hydrochloric disappears the vomiting ceases.

Dr. Johnson stated that recurrent vomiting always occurred in the children of neurotic parents, he recommended the hypodermic injection of saline solution.

Dr. Kinnicutt referred to the benefits of enterocylis and dermatoclycis of saline solution.

Dr. Forcheimer supported the neurotic theory of the disease. Hysteria is more frequent in children than has usually been recognized and constipation is frequent in these cases. In the intervals the child should not be overworked physically or mentally.

The Sanitary Treatment of Pulmonary Tuberculosis.

Dr. Trudeau referred to the importance of early treatment of tuberculosis, 68% of his early cases being apparently cured, and only 11% of later ones. The pre-tuberculous stage of phthisis is the period before the development of physical signs. At this period the X-rays are of value in diagnosis, a shadow being present at the apex and the excursions of the diaphragm being limited on that side.

Tuberculin is of great value in the early recognition of the disease and it does not seem to be productive of any harm when used carefully. The initial dose is .001 grm. and if reaction is absent it is increased until .005 grm. are used. Rest as a curative agent in the treatment of pulmonary tuberculosis has not been generally enough recognized, as a therapeutic agent. In tubercular joints this means of treatment has long been advocated by surgeons, and the benefits of rest are very

striking in laryngeal tuberculosis after tracheotomy. Rest in the open air reduces temperature and digestion goes on well in spite of the absence of exercise.

Treatment by tuberculin in selected cases was spoken of in a hopeful manner. In apyretic cases with good nutrition this treatment may be carried out for several months until no reaction results from the toxin. The treatment is free from danger, and probably exerts a favorable influence.

Actinomysosis.

Dr. Wright gave a beautiful lantern demonstration of the ray fungus and its lesions. It is probably commoner than has hitherto been recognised. The diagnosis can be made from the presence of grey granules in the pus which show the characteristic radiate arrangements with the microscope.

Multiple Abscess from a New Pathogenic Fungus.

Dr. Hektoen presented photographs and exhibited lantern slides of a sporothrix resembling that described by Schenck. It occurred in a boy who was infected by a wound in the thumb, and in whom abscesses developed in the forearm. The organism is pathogenic for mice and white rats, producing typical ulcers with underminded edges. Three cases have been reported, and in all infection took place through a wound in the hand.

Pernicious Anæmia.

Dr. Cabot presented a study of this disease based on 110 personal cases. The etiology is obscure, most cases coming on without any apparent cause. Hæmorrhages occurred in 37 cases, but this seemed to be a symptom rather than a cause of the disease. The hæmorrhages occurred most frequently from the bowels, and then from the nose and gums; in one instance the patient lost almost a pint of blood from the ear.

The symptoms were often slight even in active stages of the disease. Muscular weakness and dyspnœa on exertion were the earliest symptoms. Gastro-intestinal paroxysms, consisting in vomiting and diarrhœa, were common; they were not continuous, and passed off without apparent reason or relation to treatment. The disease is never progressive, intervals of improvement occurring during which the patient may return to work. The spleen was enlarged in thirteen cases, and the ophthalmoscope showed hæmorrhages in the fundes in fifteen instances. Fever was present in two-thirds of the cases. The urine was normal in fifty-three cases, it was usually pale and only presented the dark sherry aspect, which is so frequently spoken of, in two cases. In one-third of the cases

nervous symptoms were present (due to changes in the spinal cord), and sometimes simulated tabes or diffuse myelitis.

The blood examination showed a count of under two millions in 106 cases; the white blood corpuscles are usually below normal; hæmoglobin was in excess of the red blood cells in seventy-nine cases, and megaloblasts were found in every instance but three; in these only one examination was made. Megaloblasts often vary from day to day, and they should never be pronounced absent from a single examination. Myelocytes were present in sixty-six cases.

The remissions which are such a constant feature of the disease in spite of the term "progressive anæmia," are ill understood, and although improvement is usually attributed to the use of drugs, the writer believes that no remedy exerts any influence on the condition, and that even arsenic is of no benefit.

During a remission the number of red blood corpuscles increase; the hæmoglobin sometimes fails to keep pace with the increase, so that the blood examination resembles that of chlorosis. The red cells are often very large during remissions. The average course of the disease is from one to two years, and it may last for five years. Recovery has taken place after the development of coma.

Papers on Pernicious Anæmia were also read by Drs. Billings and Henry.

Addison's Disease.

Dr. Johnson presented a case of Addison's Disease with Improvement on Suprarenal Extract. In the summer of 1897 the patient became acutely weak and lost flesh rapidly, there was also gastro-intestinal disturbance for two months. He rallied in the autumn and pigmentation developed during the winter. The following summer he was very weak from vomiting and purging, and was confined to bed. He again improved and remained well during the winter of 1898. During the summer weakness was prominent, but after the administration of suprarenal extract and rest, he gained flesh and improved. Of forty-three cases of Addison's Disease treated by suprarenal extract, thirteen were improved, nine were cured, elevn died and five were unimproved. In Dr. Johnson's case the arterial tension increased markedly after the administration of the extract.

Venous Thrombosis in Cardiac Diseases.

Dr. Welch referred to four cases in which venous thrombosis occurred in the subjects of cardiac disease. These cases are not referred to in the text-books, but from the writer's personal experience it seems probable that they are not very uncommon.

The first case occurred in a negress, aged 17, who suffered from aortic and mitral insufficiency. She suddenly developed a swelling in the neck, with a hard and painful œdema of the left arm. The pulse was 120, weak and intermittent. At the autopsy cultures from various parts proved sterile with the exception of those from the thrombus, which showed pure cultures of streptococci.

The second case was one of mitral stenosis, and recovered. The left side of the neck became swollen and tender, and later a hard cord was felt. A week later the left arm became swollen and hard. In two months the collateral circulation was established and in spite of embolism of the popliteal artery, the patient recovered.

The third case was one of advanced aortic and mitral disease. Oedema of both arms developed, but was more marked on the left side. The left brachial, axillary and subclavian veins were thrombosed.

In the fourth case the patient was a male of 78, with arterio-sclerosis. The left femoral vein became thrombosed, and ultimately recovery occurred. This case must be placed in a different category to the others.

Twenty-seven cases of peripheral venous thrombosis were found in the literature, of which twenty-three occurred in the upper and four in the lower extremities. The affection is found principally in mitral stenosis, so that the condition is oftener found in the female, seventeen of twenty-one cases being of this sex. Half of the cases occur under thirty. The veins of the left arm are much more frequently attacked than the right (twenty-one out of twenty-three cases). The predominance of the condition on the left side is referable to the more oblique and longer course of the left innominate vein and to pressure from the enlarged left auricle. In addition to mechanical factors an infection is probably the true explanation of these cases.

Rupture of Aneurism to Superior Vena Cava.

Dr. Stengel recorded a case of rupture of an aortic aneurism to the superior vena cava. The condition was recognised during life. The patient, a male æt. 30, suddenly felt something give way in his chest, and this was followed by a great sense of oppression. Great swelling and cyanosis of the neck and upper part of the body as far as the waist followed, whilst the lower half of the body remained perfectly normal. Death took place after twenty-four days.

In commenting on the length of time a patient may survive, a case of some months duration was referred to, and another which apparently resulted in recovery. Venesection in such cases might be suggested by the intense lividity, but such a proceeding would probably prove injurious by preventing the coagulation of blood in the aneurysmal sac.

Graves' Disease Without Exophthalmic Goitre.

Dr. W. H. Thompson recorded a number of cases of this disease with tremor and tachycardia, yet without prominence of the eye-balls or goitre. Of sixty-six cases, thirty-two had neither exophthalmos or goitre. Dr. Thompson therefore considers that the thyroid origin of the disease is improbable, and that an explanation of the symptoms must be sought elsewhere.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK,
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VOL. XXIX MAY, 1900. NO. 5.

ON COMPULSORY VACCINATION.

It speaks well for the officials of our Provincial and Civic Boards of Health and the methods employed by them that small-pox, and that of a virulent type, should have been introduced into one of the busiest hotels in this city, and, notwithstanding the circumstances, which were peculiarly favorable to its rapid spread in our midst, they have managed to limit the epidemic to some four cases, and indeed have completely stamped it out. Other places have not had the same good fortune. The disease, it would seem, was introduced from the West, and at more than one point between Winnipeg and Montreal there is at the present time the greatest anxiety lest the disease pass beyond the control of the authorities.

But we in this Province must not be lulled into inactivity by a false sense of security. Time and again during the last five years Dr. Lachapelle and his able coadjutors, have arrested threatened epidemics, but good fortune may not always wait upon watchful and zealous service, and should some active focus of the disease develop in the Country to the south of us, or at some one or other spot in Canada, the disease might become disseminated in so many different parts of the city and province that our Health Board, with its small staff, would be wholly unable to cope with it, and the awfulness of 1885 be with us again.

The outlook is not reassuring. For the last year and more, as indicated in our last number, a peculiarly mild type of variola has been prevalent in the Northern and Middle States—a form so mild as not to be typical—and as a consequence, many cases not being diagnosed, the disease has spread insidiously. During the last few months we are beginning to hear more frequently of more virulent cases, whether these are the lineal descendants of the milder forms, or are the result of a separate importation from the west coast, is here of little practical moment. Suffice it is to say that the disease is being reported from so many centres as to create deserved alarm. Now, within the last few days, has come the news that the disease has shewn itself in the densely congregated settlement of French-Canadian factory hands at Lowell, Massachusetts, with the disquieting information that many families there, fearing the employment of active measures by the health authorities, are hurriedly returning to this province.

The prospect is more than disquieting. During the hot summer months, judging from previous experience of this disease, there may be no extensive development, but with the autumn it looks as though we may expect a most serious condition of affairs throughout the Province. Some communities are almost wholly unprotected. Those who are wise are already vaccinated, and have assured the safety of their families, but some of our population have taken no heed to the lesson of fifteen years ago, and remain averse, nay, actively opposed, to vaccination and the security it conveys. And thus if—as is well within the boundary of probability—the disease extends so as to be out of the control of the Board of Health and the methods of isolation and segregation, we have to look forward to a period of enormously augmented mortality, the little children more especially swelling the roll, to a most serious interruption of intercourse and the ordinary routine of life throughout the Province, to commerce being brought to a standstill and to an arrest of the present prosperous advance of the Province, from which it will take years to recover.

The matter, therefore, is one affecting the whole community, one which not we of the medical profession alone, but the community as a whole, must cope with. Unless the community as a whole agrees to the rigorous carrying out of precautionary and preventive measures, we remain exposed at any moment to this terrible visitation.

First and foremost among these preventive measures is compulsory vaccination, and that especially of little children. It is unnecessary in these pages to demonstrate how this procedure renders a country secure. We may, however, refer to the most modern instance. When the Americans—how shall we express it?—assumed the protectorate and paternal direction of the Island of Puerto Rico, but a few months ago, they found

small-pox rife, in fact, endemic among the inhabitants. They immediately ordained compulsory vaccination of everyone, and now small-pox is non-existent there and absolutely a thing of the past.

Now, there is but one authority which can take the position in this Province taken in Puerto Rico by the American Government, and that one is the Catholic Church. We appeal to Archbishop Bruchesi and the Catholic Hierarchy of this Province to take up the matter—to issue pastorals and direct the clergy of every parish to publish to the people the meaning and the value of vaccination. Doing this, they can be assured of the fullest co-operation of our profession and of the gratitude and appreciation of the whole community.

In making this appeal, a necessary corollary is that the Catholic Hierarchy aids us in the establishment of compulsory registration of births. Unless there be a compulsory official return month by month of all the births, it is impossible to keep trace of the children born, impossible to determine whether all have been vaccinated. As we have pointed out, it is among the little children that the deaths from small-pox are most frequent—and on their behalf, as again for the protection of the community as a whole, we make this appeal. With the help of the Bishops, this stigma of neglect of necessary hygienic precautions can be removed from our land. We ask for that help.

THE ANNUAL MEETING OF AMERICAN SURGICAL ASSOCIATION.

The surgical section of the American Association of Physicians and Surgeons, which met this year in Washington, devoted the greater part of the three days to the surgery of the stomach. Papers were read on the surgical treatment of gastric hæmorrhage, perforating gastric ulcer, pyloric stenosis, and the early recognition of cancer of the stomach. The President, Dr. Weir, read a valuable paper on duodenal ulcer and its sequelæ.

There are certainly advantages in bringing together a number of papers dealing with subjects that are closely allied, as are the different surgical procedures applied to the stomach. On the other hand, the plan allows of more than the usual vagueness and wandering from one subject to another by the members taking part in the discussion. This feature is the more marked when, as in Washington, all the papers are read before any discussion is permitted. A member on rising to discuss knows that he is limited to ten minutes, probably wishes to speak on more than one of the papers, and therefore, can only make bare, and too often unqualified and disconnected statements. More ground is covered by this plan but at the expense, in some instances, of clearness and of force.

The feeling of the meeting seemed clearly on the side of early operative interference in perforative ulcers, earlier interference in selected cases of gastric hæmorrhage, and greater pains in the earlier diagnosis of beginning malignant disease of the stomach. In this connection the suggestion that the stomach wall be curetted by a weighted stomach tube and the scrapings submitted to the microscopist seems worthy of an extended trial.

The frequency with which the pylorus becomes fixed by adhesions was the subject treated by Cabot. The question of pyloroplasty versus gastro-enterostomy often depends upon the fixed or movable condition of the pylorus. The failure of pyloroplasty would seem in some cases at least to have been due to adhesions fixing and holding the pylorus in a high situation. Under such circumstances a free opening between the most dependant part of the dilated stomach and the duodenum, permitting a better emptying of the stomach is followed by much greater relief of the symptoms that may have been due to dilatation.

Dr. Weir was a model chairman and under his direction everything passed off promptly. No time was lost waiting for volunteers. The proceedings all through were of a high scientific order and everyone felt that they were more than repaid for attending.

McGILL MEDICAL LIBRARY.

Report for the Quarter Ending April 30th, 1900.

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F. W. Campbell, M.D., (3); G. Gould, M.D., (9); Editors of the Montreal Medical Journal, (30); G. E. de Schweinitz, M.D., (6); F. J. Shepherd, M.D., (25); Royal Infirmary of Edinburgh, (1); University College, Bristol, (1); G. C. Whipple, M.D., (2).

Obituary

DR. J. L. LEPROHON.

There are some who in due course pass away, full of years, and their departure is looked to as to the timely and inevitable; the seasonable and natural. In these, outward tokens of failing energy and declining vigour become more and more evident. It was not thus with Dr. Jean Lukin Leprohon, whose death we now record. Although nearly eighty years of age, he was apparently as strong and vigorous a week before his last illness as he was at fifty, and he still gave promise of many years of active life. His step was firm and elastic; his intellect clear and unclouded, and his urbanity and polished manners had not suffered the depressing chill of life's advancing evening. Dr. Leprohon was, in the full acceptance of the term, a gentleman, mild, gentle, affable manner, courteous and polite, as were Charlebois, Boyer, Bruneau, Peltier, D'Orsonnens, and other gentlemen of the old school, who once adorned the French section of the medical profession in Montreal. Dr. Leprohon like them, had the advantage of an excellent classical education, while his professional training at McGill and in Europe were thorough and complete. He spoke French and English with equal ease and with equal correctness. He had a facile pen, and his ability as a writer was conspicuous in the pages of the "Lancette Canadienne," which he published fifty years ago, but which had not the extended life of its founder. Dr. Leprohon was born at Chambly in this province on the 7th April, 1822, and died on the 23rd May, 1900. He commenced practice in 1844 at what is now 181 McGill Street upstairs. He married in 1851 Miss M. E. Mullins, a lady who was remarkable for her literary ability, who has left many evidences of a versatile and gifted writer with "hand that penned and tongue that uttered wisdom." Dr. Leprohon leaves behind him four sons and four daughters, Dr. Rodolphe E. Leprohon, and Claude de B. Leprohon, Vice-Counsul of Brazil, both of this city; and Messrs. E. T. Leprohon and J. de N. Leprohon, who reside in the United States; Mrs. J. Alex. Bonin, Mrs. Albert Leplat, Mrs. L. Villeroy, and Miss Leprohon.

MR. WOLFERSTAN THOMAS.

It is with most sincere regret that we record the death of Mr. F. Wolferstan Thomas. He died, aged 66 years, on Thursday, 17th May. In every philanthropic work Mr. Thomas was foremost, and everything he

undertook he did with all his energy, never sparing himself. He was a man of great executive ability, and never undertook duties which he did not perform.

He was President of the Protestant Insane Asylum, Treasurer of the Mackay Deaf and Dumb Institute, closely identified with the Ladies' Benevolent Association and many other charities too numerous to mention. There was one charity, however, which was very dear to his heart, and with which he was more closely associated than any other. We refer to the Montreal General Hospital, of which he was President. Under Mr. Thomas's presidency the hospital made many and great advances; when he took office, six years ago, the hospital was old-fashioned, out of repair, unsightly and unsanitary, and much in the same condition as it had been for sixty years. Mr. Thomas converted it into a modern hospital, well equipped with all the latest appliances, having bright, cheerful, airy wards, capacious and aseptic operating rooms, modern electrical plant and ventilating apparatus, etc. The money required for these improvements he himself was chiefly instrumental in collecting. In addition to this, by his exertions, a most beautiful and comfortable Jubilee Nurses' Home was built, the foundation stone of which was laid by Lord Lister when he was here with the British Association in 1897. Hr. Thomas was always thinking in what manner he could improve his beloved charity, and on his death bed was planning for the erection of an Out-Patient Department.

Mr. Thomas was a most energetic and resourceful man, of wide and varied sympathies, and having a keen insight into affairs. His position as a banker is well known to all, and notwithstanding his active connection with so many charitable institutions, the work of his bank was never neglected. We often were amazed that he could do so much outside work and yet make such a grand success of the banking house with which he was associated. His death removed one who will be greatly missed both in the commercial and charitable world. Especially will he be mourned for at the Montreal General Hospital, where he was so often seen and for which he did so much. His family have our sincere sympathy in their great loss.

DR. JOSEPH ALLAN, OF OSGOODE STATION.

It is with great regret that we record the death of Dr. Joseph Allan, of Osgoode Station, at the advanced age of 77 years. Dr. Allan was for over half a century one of the leading practitioners of the Ottawa Valley. A few years ago he was compelled by failing health to retire from active practice. He received his medical education in Glasgow, taking the license of the Faculty of Physicians and Surgeons of that city as far

back as the year 1843. Shortly afterwards he came out to Canada and started practice in the village of Metcalfe, in the County of Carleton, Ontario. He was the first medical man in this section of the Ottawa Valley, and for a long period was the sole practitioner in an area of many miles. The country at that time was a veritable wilderness, and the trials and difficulties which Dr. Allan passed through were far beyond anything dreamed of by the practitioner of the present day. Among the few of the original settlers of this district left, Dr. Allan's name is to this day mentioned with the greatest respect and kindly feeling. His high sense of duty and the unbounded interest he always had for his profession made him always a welcome visitor when trouble visited the homes of the settlers of the past generation.

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VALEDICTORY ADDRESS DELIVERED TO THE GRADUATES IN MEDICINE AT THE ANNUAL CONVOCATION OF THE MEDICAL FACUTLY OF McGILL UNIVERSITY, JUNE 15, 1900.

BY

T. J. W. BURGESS, M.B., F.R.S.C.,

Professor of Mental Diseases, McGill University ; Superintendent of the Hospital for the Insane, Verdun.

With all my heart I would that to one more capable had been entrusted the duty of bidding you farewell,—of wishing you that success and happiness which, as the voice of the Faculty, I do most heartily wish you.

During your collegiate course your Alma Mater has done what she could for you; now in your own strength you must stand or fall; she has laid the foundation of your future life, and I trust laid it well; it is for you to raise a superstructure perfect in its parts and horourable both to her and the builder.

It may seem to you as though your days of toil and study were over, and that, with a diploma certifying to your fitness and proficiency in learning, you will be armed and equipped with everything necessary to secure your success. I trust that none of you will reason thus. Remember that your work, your studies, and your readings have not ended,—they have indeed but just begun.

To-day you are entering upon a new world, a world of labour, and pain, and sorrow, a world in which there is at last but one event to all the sons of men, be they rich or poor, high or low. You must be prepared to deal with anxiety, fear, grief, and despair, as well as fever and physical pain; you are to be not only physicion, but friend, confessor guide, and judge; you cannot avoid these responsibilities if you would, nor should you if you could.

Do not, however, even for a moment imagine that I would have you look upon the world before you as one of utter darkness. The very

shadows that I have mentioned prove that there must be plenty of sunshine as well, the sunshine of good deeds wrought by brave men and fair women, whose best and noblest characteristics are brought out most vividly amid such scenes as those in which you will be called to act.

In so large a class there cannot but be many natures,—men of the most diverse capacities, aims and destinations. Each of you, too, has his aspirations, a little vague no doubt, but nevertheless real. Keep them, I conjure you, as long as possible, strive to realise them. In the words of Nathaniel Willis :—

> "Press on! for it is Godlike to unloose
> The spirit, and forget yourself in thought;
> Bending a pinion for the deeper sky,
> And, in the very fetters of your flesh,
> Mating with the pure essences of heaven!
> Press on! 'for in the grave there is no work
> And no device.' Press on! while yet you may."

In the ever-increasing competition in the medical profession, you will probably find the struggle for existence an arduous one,—will meet with many worries, many cares, many disappointments,—will find many of youth's golden visions fading away into gray, cold mists. But I would counsel you to be of good courage, remembering always the old adage that "every cloud has its silver lining."

Doubtless, among other things, you will all desire to make money; not for the money's sake, but for what you can do with it. It is not a desire to be ashamed of. "He that does not provide for his own household is worse than a heathen," were the words of one who has also declared that "the greatest of these is charity." The words of St. Paul are nowhere more applicable than to the profession of medicine. He who is ever on the alert with the gift of his services, or, what is more common, is careless in demanding proper recognition of his work, sins trebly,—against himself and his family, against his brother practitioners, and against those whom he thinks he is serving. But mark this. The best works in the world are not done for money, or from selfish motives of any kind. While all the giving of this world is not committed to the doctor, he has a special heritage in the poor, and if you are to achieve true success,—the success that brings happiness and is the only kind worth seeking,—you must do a vast amount of work, not for money, but in part because you like it, and in part because it will do good and help others. The privilege of relieving suffering humanity, of being a messenger of peace to those in pain, of endeavouring to imitate the example of Him who went about doing good, is indeed a reward above all monetary considerations. No more Christlike emblem can be found than the physician braving the dangers of pestilence in the wretched hovels of the poor, or the surgeon upon the battlefield,

ministering alike to friend and foe, without hope of earthly reward, but feeling amply recompensed in the conscientious discharge of his merciful calling. One day of such an opportunity to render service to God and man is worth a whole life spent in the acquisition of a science which confers such power upon its possessor.

In his poem, "The Physician," read at Washington last month, Dr. S. Weir Mitchell thus beautifully sets forth the lesson which our profession inculcates :—

> "To give what none can measure, none can weigh,
> Simply to go where duty points the way;
> To face unquestioning the fever's breath,
> The hundred shadows of the vale of death;
> To bear Christ's message through the battle's rage,
> The yellow plague, the leper's island cage,
> And with our noblest 'well to understand
> The poor man's call as only God's command.'
> One bugle note our battle call,
> One single watchword, Duty,—That is all."

As medical men you are expected to play a twofold part. It is your duty not only to acquire as complete a knowledge as you can of purely professional matters, but you should also lose no opportunity of acquiring a knowledge of the world. Your success in life will depend as much upon the latter as upon your professional attainments. Remember always that you are men amongst men; and that no matter how great your medical skill may be, if you have not acquired an ease and grace of manner, you have not the key to unlock the door of public confidence Often you will find it true that people will first call you in because they like you as a man; and then retain you because they like you as a physician. To attain this happy result, it is above all things necessary that the medical practitioner should be a gentleman in the widest sense of the term. I do not mean in appearance only, in outward demeanor, in the cleanliness of his linen, or the cut of his clothes, but in very heart. Thackeray, at the close of his "Four Georges," asks :—"What is it to be a gentleman? Is it to have lofty aims, to lead a pure life, to keep your honour virgin; to have the esteem of your fellow citizens, and the love of your fireside; to bear good fortune meekly, to suffer evil with constancy; and through evil or good to maintain truth always? Show me the happy man whose life exhibits these qualities, and him we will salute as gentleman, whatever his rank may be." Nowhere will you find a better definition of what constitutes a true gentleman,—follow it and you cannot fail to be such.

A word now as to your leisure time, because when first entered in the field of practice it is not likely that a host of sick people will be waiting to avail themselves of your kind attentions or superior skill. On the contrary, you must expect much wearisome waiting, many hours of

enforced idleness. How may you occupy these hours to the best advantage? Good literature is, I think, beyond doubt the most valuable resource at the command of the young practitioner. Not medical text-books, for the jaded brain, after a five years' course of cramming, calls loudly for a change of diet. Instead, avail yourselves of the great masters of dramatic and poetic literature, or take excursions with some of the standard essayists, historians, or novelists. Believe me, every moment spent in the society of such men as Shakespeare, Tennyson, Montaigne, Macaulay, or Fielding will repay you a thousandfold.

Nor is it only on your entry into practice that the resources of general literature will be found of incalculable benefit. There is no human occupation which taxes the vital energies more than the practice of medicine. In the severe strain imperatively entailed by close attention to a large visiting list, and the constant devotion of the mind to one line of thought, we have just the conditions most favorable for a premature breakdown in the delicate mechanism of the human mind and body. The remedy against such a catastrophe is thus cogently put by Sir William Mitchell Banks, in an oration, "Physic and Letters," delivered before the Medical Society of London a few years ago :—"The essay, the review, the poem, the incident of travel, the glamour of history, the romanace; these are the things that for a short, sweet, evening hour or two will carry him into a land where there are no querulous complainings of sick men, no tearful faces of anxious relatives, no thankless words of ungrateful patients."

Or, if you would hear a more ancient authority on the same subject, let us thus quote you from Langford's essay, "The Praise of Books" : "As friends and companions, as teachers and consolers, as recreators and amusers, books are always with us, and always ready to respond to our wants. We can take them with us in our wanderings, or gather them around us at our firesides. In the lonely wilderness, and the crowded city, their spirit will be with us, giving a meaning to the seemingly confused movements of humanity, and peopling the desert with their own bright creations."

It may seem superfluous to tell you that in order to reap these advantages you must be readers not collectors of books. I have known some good men develop into the latter only. Better! a thousand times better! a dozen good books well thumbed than a whole library of uncut volumes, though of the choicest. Oliver Wendell Holmes, in his "Autocrat of the Breakfast Table," says :—"Certain things are good for nothing until they have been kept a long while; and some are good for nothing until they have been long kept and *used*. Of the first, wine is the illustrious and immortal example. Of those which must be kept and used I will name three,—meerchaum pipes, violins, and poems." The latter part of the saying is equally applicable to books as a whole.

As your instructor in mental diseases, it would hardly be right that I should allow you to escape all mention of the place occupied by my own specialty in your future career. "The proper study of mankind is man" said the poet Pope, and in a very special sense is this true of the medical profession. You, whose duty it will be to consider all that relates to the health of your fellow-men, have to regard man not only as an organized being having certain relations to the external world, but also as endowed with a mental constitution, through which his material organization is constantly influenced. You know how closely the mind and body are related to each other in health and disease, it therefore behoves you to watch well and carefully analyze the mental peculiarities of your patients. Believe me, there is no department of study to which you can give attention that will yield more therapeutic aid in dealing with the sick than a thorough cultivation of the power of quickly estimating their mental states. The psychological conditions of a patient exercise an important influence on the progress of disease, on the character of secretions and excretions, and on the effects of various remedies. It is, therefore, just as necessary that you should give some study to the intellectual powers of your charge, that you should know how to handle his will, imagination, and emotions, as it is that you should know how and when to give certain drugs, and the effects you expect them to yield. When you come to the bedside of the sick try to enter into the feelings and moods of the patient, remember that pain and disease are stern realities, changing the mental tones so that you cannot judge the sick by the well. At the bedside, too, be brave-hearted and joyous. Physical health is, unfortunately, not contagious, but mental and moral health is. There is much sound sense in the old quatrain :—

"Speak sober truth with smiling lips; the bitter wrap in sweetness,
Sound sense in seeming nonsense, as the grain is hid in chaff.
And fear not that the lesson e'er may seem to lack completeness,
A man may say a wise thing, though he say it with a laugh."

And now, as you bid adieu to all the pleasant memories of student-life to enter on the battle which all must wage, with our united right hands we give you a reluctant good-by, a hearty God-speed. In many a graver season, I doubt not, you will look back on the busy, happy hours, full of brightest hope, passed in the college halls, and will long cherish the friendships formed therein. Let me add, in conclusion, that in receiving your degrees to-day, you have pledged yourselves to your Alma Mater. Her vows are on you. You go forth as true knights sworn to honour and fidelity. See that no act of yours brings discredit on her.

Always, throughout your life, let your motto be loyalty,—loyalty to yourselves, loyalty to your fellow-men, loyalty to your Alma Mater. Old McGill.

THE DUTIES AND LIMITATIONS OF THE MUNICIPAL BOARD OF HEALTH.

BY

ALDERMAN H. B. AMES, B.A.,

Chairman of the Hygiene Committee.

Gentlemen,—It is not my intention to-night to attempt to read before you a paper on hygienic science. The most recent medical graduate is better qualified than I am for such a task. But through force of circumstances, I may say political rather than medical, there has been assigned to me the chairmanship of that civic committee under whose control fall many matters concerning the local health.

Now no one is more anxious to see the department placed upon a satisfactory basis than I, therefore at the outset of this arduous undertaking I desire to secure the sympathy and the co-operation of that class of men in the community who are naturally most interested in and best informed concerning the public health. I should like to have the medical men of Montreal realize that any suggestions that they may be willing to make for the improvement of our department will be welcomed, I should also like to have them possessed of a realization of the difficulties, in order that they may be patient if the accomplishment of their ideals appears delayed in arrival.

Prior to the advent of the present council the local Board of Health had charge of two distinct departments. First, the work of the collection and disposal of the scavenging, night soil, and dead animals; secondly, that of dealing with questions concerning the public health. Owing to the fact that the scavenging department gives employment to upwards of 200 men and that the appointment to a seat upon the supervising committee conveyed with it the power of giving employment to many labourers, positions were sought on this committee, as formerly constituted, mainly by aldermen more interested in the distribution of patronage than in the protection of the public health. For the past two years I have sat upon this Board, charged with the performance of this double function, and I have felt, over and over again, that should an epidemic attack our city, the municipal committee, that would be called upon to act, would be wholly inadequate for the occasion.

Almost the first reform which the new council undertook was to separate these two wholly diverse departments and to place each different work under a committee of its own.

The committee on Incineration, as it is now called, is charged with the

* Read before the Montreal Medico-Chirurgical Society, June 8th, 1900.

oversight of the scavenging department and kindred functions, while the Committee on Hygiene and Statistics, which is also the Board of Health, is now able to devote its entire time and attention to matters hygienic. This is a great advance: what was hopeless before is possible now.

Many and varied are the duties which fall upon the local Board of Health. Under the name of the Committee on Hygiene and Statistics, it is one of the standing committees of the Council, appointed at the first regular meeting in February of each year.

The committee is composed of seven aldermen, 5 of whom are French-speaking, and only 2 (including the chairman) English-speaking. Under by-law, the Council may, if it sees fit to do so, alter the constitution of this Board by adding thereto certain citizens who are outsiders. The Council, however, is very jealous of its right in this particular and generally does not seem desirous of going outside of its own membership. Personally, I would welcome the addition of several medical men or specialists to our Board. Perhaps, if the medical men of the city were to agitate and petition in this direction the Council might grant such representation. Let this be labelled "Reform No. 2." Kindly make a note of it.

It is my purpose to-night to describe to you the work of the local Board of Health as I find it; to review the duties laid upon it; to expose the means at its disposal; to point out, so far as an amateur may do so, the obvious defects; and to invite your criticism on certain suggested improvements which appear to some of us to afford reasonable hope of better things.

Among the duties laid upon the local Board of Health by the City Charter, by the provincial regulations and by the municipal by-laws are the following:—

1st. To enforce all sanitary measures regarding the cleanliness of the city; 2nd. to take precautionary steps to prevent the spreading of contagious and infectious diseases; 3rd. to collect and compile mortuary and birth statistics; 4th. to seize and confiscate deleterious articles of food; 5th. to supervise the drainage, plumbing, and ventilation of new buildings; 6th. to examine schools, factories, workshops and the like with reference to their sanitary condition and to cause to be vacated such buildings as are unfit for human habitation; 7th. to appoint such officers as may be necessary from time to time to put the provisions into effect.

The amount voted by the Council to be expended under the supervision of our Committee, for the services above described, is somewhat under $40,000 per annum. Usually about 50 persons make up the executive staff. At the head of the department is the Medical Health

Officer, Dr. Ls. Laberge, who has been in charge for the past 15 years and who now receives a salary of $3,000 a year, plus an allowance of $250 for horse keep. Immediately responsible to the Medical Health Officer are the secretary, accountant and messenger of the department. All orders of the Committee are transmitted by the secretary to the Medical Health Officer, and are by him issued to his various subordinates. So much for the staff at our disposal. Let us return now to further consideration of the work of the department under the headings herein before mentioned.

THE ENFORCEMENT OF MEASURES RELATING TO THE CLEANLINESS OF THE CITY.

It is the duty of the Board of Health to see to it that all sanitary measures relating to the cleanliness of the city are put in force. A considerable code of such regulations exists in the form of by-laws passed from time to time by the Council. As previously explained, the Board of Health no longer undertakes to clean the streets and the lanes, but is, (or should be at least) the watchful inspector to overlook such work, now in the hands of another department, and to see that it be properly done. To this end there is a municipal force known as the Sanitary Police. It consists of a captain, one lieutenant and 19 inspectors. The officers and men wear a blue serge uniform with a forage cap and a metal badge, so as to be readily distinguished by the citizens. Each badge worn by an inspector has thereon a distinctive letter of the alphabet, so that, should any citizen desire to make complaint regarding a given sanitary official, identification presents no difficulty. For the purpose of visitation the city is divided into 12 districts. To each district is assigned one sanitary inspector. It is his duty to make a careful house-to-house inspection and to cover his entire district twice a year. As, however, these inspectors are frequently taken from their regular work for special duties such as, at present time, the inspection of lanes, yards, and privy pits, I must admit that the city is not covered as required.

Each inspector reports at the City Hall before starting out on his day's work and again immediately after lunch and finally at 5 p.m. In a book, devoted exclusively to his work, a detailed report of what he has done or seen during the day is entered.

The majority of recorded complaints are upon such items as the following:—Repairs needed on given premises to put the plumbing or drainage into proper order; unhealthy house, dilapidated, overcrowded, damp or dirty; privy full, in need of cleaning, or in bad repair; manure box unemptied; filth or water in the cellar; dirty yard, lane or vacant lot in need of cleaning, etc. The following morning the office staff examines the several books, collects and classifies the various complaints and the work of taking the necessary steps to abate each separate nuis-

ance is assigned to officials regularly employed for this purpose. In every case the proprietor is notified that the nuisance must be abated forthwith and is given reasonable time to comply with the demand. At the expiry of the delay specified the premises are revisited. If the nuisance has not been abated, action is taken in the Recorder's Court against the delinquent. In the past I find that aldermanic influence has frequently come between the department and the proprietor for the protection of the latter. I have known of cases where notorious nuisances have been permitted to continue, because the owner of the premises had the powerful protection of an aldermanic friend. It is astonishing how many citizens, even electors of mine, consider that their alderman, as their representative at the City Hall, is there mainly to protect them from being forced to comply with the existing by-laws. Another difficulty lies in the fact that the sanitary officials have been chosen, in many instances, without any reference to any special aptitude for the work, their selection having been purely the result of aldermanic cabal. Hitherto it was considered that almost any broken down individual might find a life position as sanitary inspector. One of the first reforms introduced by our new committee was to appoint a board of examination and establish a precedent that all candidates should be examined by this board and only the names of those qualified should be considered by the committee when making a selection. In course of time, if this precedent be followed, the personnel of the department can be much improved. The men who to-day compose the sanitary police force are, I believe, endeavouring to do their duty, but they are, in not a few instances, insufficiently endowed by nature to succeed in any vocation and certainly not in one requiring those special aptitudes rightly demanded in a protector of the public health. Since, however, to dismiss these men and to replace them by others is a very difficult task we are now undertaking to remedy their defective education by sending them as it were to college. An arrangement has been made with the McGill authorities to enable the sanitary staff to attend 20 lectures comprising a fair survey of the field of municipal hygiene, and the Council has voted a small sum of money for the purchase of text books to form the nucleus of a working library at headquarters. At the end of this course of lectures, probably next November, the inspectors will be submitted to a written examination. Such as pass with credit to themselves will receive, in addition to a certificate, a cash bonus sufficient to reimburse them for their overtime. As to what will be done with those who fail to pass in the examination, I cannot speak with certitude, but I can assure you that, if my wish prevails, they will be given an opportunity to seek employment elsewhere. We need the backing of a powerful public sentiment, however, in every civic department to enable us to get rid of officials whose whole fault lies merely in the fact

that they are incompetent, who have not stolen, nor been drunk on duty, nor been uncivil to the public, but who simply draw salary to do work which they cannot do and so block the way for the appointment of others more capable. If you can help us in bringing the aldermen to realize that, for the benefit of the public service, individual sacrifices must be made, you will have done much towards making the work of remodelling the department a possibility.

MEASURES FOR THE PREVENTION OF THE SPREAD OF COMMUNICABLE DISEASES.

The regulations of the City Council and those of the Provincial Board of Health are fairly complete and grant our department considerable power in the above matters. From time to time the Board of Health suggests to Council additional regulations, always, however, within the limits of the powers conveyed by the charter. At present smallpox, typhoid fever, diphtheria, croup, measles, chickenpox and scarlatina are the only prevalent diseases regarded as communicable. As it is the duty of every physician to report to the Medical Health Officer, within a delay of 24 hours after discovery, the name and address of any patient whom he may discover suffering from any of the above diseases, the department is duly made cognizant of cases existing throughout the city. I have recently given orders to have an employé in the office during the evening until 10 o'clock, since many doctors make their rounds in the evening and would prefer to report by telephone at once. The school boards are also required by law to report all children absent on account of contagious sickness. This I find is done by the Protestant schools, but is not very carefully followed by the Roman Catholic institutions. Cases are sometimes reported by persons other than doctors; anonymous letters occasionally are received calling attention to suspicious premises; the sanitary inspectors on their rounds find suspicious cases; in all such instances one of the doctors connected with the department visits the premises and verifies after diagnosis. If the premises in which the disease has broken out, are ample, and complete isolation is possible without removing the patient, this is forthwith ordered and the house is duly placarded, but as in many cases these maladies occur in the dwellings of the working classes, where isolation is impossible, the patients are frequently removed, if suffering from smallpox, diphtheria, or scarlatina, to the Civic Hospital in an ambulance at the public expense. This is not done, however, with typhoid fever, consumption, chickenpox or measles. In fact I am told that nine-tenths of the cases of communicable diseases reported, are nursed at home. When the patient has been removed, or after he has been pronounced cured, the house is disinfected upon the order of the attendant physician. I fear that frequently, when the premises are

undergoing disinfection, the families scatter among the neighbors, thus taking with them the germs of the disease, and I would welcome any suggestions intended to lessen this evil. In passing let me note two minor improvements recently effected:—First, a new ambulance has been ordered; secondly, new quarters have been prepared and opened at 700 Mount Royal Avenue, to receive families whose premises are undergoing disinfection in place of the forlorn room in the old court house opposite the Nelson Monument.

Sulphur has hitherto been the disinfectant employed by the Board of Health. It is furnished free of charge by the city. The usual plan is to burn on the stove 2 lbs. of sulphur to 1000 cubic feet of house space and to keep the premises closed for six hours. Where the occupants have been willing to pay the additional cost of the material, formaline has been lately used. This is more expensive than sulphur, but the department has so often received complaints regarding the sulphur that at present it is using formaline exclusively and will continue to do so in future. As soon as the disinfection is over the premises are further examined by a sanitary inspector to discover, if possible, the cause for the outbreak of the disease. You will notice in the annual report that there are not a few instances where four, five, or even six cases of the same malady have occurred in a given house. Where the breaking out of the disease can be in any way attributable to physical conditions such as defective plumbing, dirty back yards, etc., the house must be put in good order before it can again be occupied. The entire time of three of our sanitary inspectors is required upon the work of placarding, disinfecting and subsequent examination, their duties extending throughout the whole city.

In connection with this service the Civic Hospital for infectious and contagious diseases comes in for mention. It is located on the extreme northeast border of the city at the head of Moreau street in Hochelaga Ward. The present structure was erected during 1886 and 1887 at a cost of nearly $25,000. Judging from its condition, the work contract has been most carelessly executed. The building, as you are probably aware, consists of a central administrative portion with a north and south wing. In 1894 and 1895, when half of the building was under the supervision of the General Hospital and the other half under that of the Sisters of the Hotel Dieu, about $12,000 were annually appropriated for this dual service, but to-day we are compelled to receive and care for all denominations, on a civic appropriation of from $6000 to $6,500. When you consider that we have often a population of between 50 and 60 souls to warm, house and feed upon this amount, that we have to pay out of this all the wages, from the Medical Superintendent to the guardian, for all provisions, food, light and general con-

tingencies, you will realize that it is all we can do to furnish the patients with absolute necessities, to say nothing of those luxuries which the sick and those who care for them are always considered as having a right to receive. It appears to me to be false economy to be thus niggardly to this most important service. Although the building contains four wards, our appropriation can only permit us ordinarily to open two. We, therefore, care for scarlatina and diphtheria patients only. At the present time the extreme north end is devoted to our three smallpox patients, with a complete separate staff, but this would not be possible were it in winter time. During 1899, the sum of $9000 was spent in repairing the old building, but the result is by no means satisfactory. At best the hospital, thus patched up, can only serve for a couple of years longer. One of the first claims upon the civic treasury, in the near future, must be the sum required for the construction of a new civic hospital. I would submit for your discussion some of the propositions that have been laid before us in this regard. First, the construction of a new hospital on the pavilion plan, without separation of patients as to religious belief, at a cost of say $50,000, containing from 6 to 8 wards. Secondly, to induce our Protestant population to give the money necessary to erect a contagious and infectious hospital for their own, the land to be supplied by the city and the present building to be assigned to Roman Catholic patients only. Third, the resumption of the old practice of placing half of the present hospital under the control of a Catholic and half under the control of a Protestant committee. I believe that the present Council is prepared to deal fairly with this question, when those best qualified to judge are unanimous as to what is for the interests of all.

The hospital as it exists to-day is, I believe, as well managed as the limitations of the case will permit. Dr. J. E. Laberge, the physician in charge, is energetic and apparently most anxious to give satisfaction. He is assisted by Miss Annie Montgomery, matron and head nurse, recently arrived from Toronto, where she had charge of the contagious and infectious diseases hospital of that city. The nursing staff usually consists of a trained nurse and four or five probationers in the last half of their term and two or three in the first half. The wages paid are not such as to attract many applicants, but the staff in the main is faithful and much unappreciated good work is carried on by the nurses at the Civic Hospital. I wish your Society would name a sub-committee, consisting of two or three of its members, to act as visiting governors, to examine with members of our committee, say once a month, the Civic Hospital, with a view of making such improvements as our limited revenue will permit.

VACCINATION.

The City of Montreal grants free vaccination to all who may desire it. For this purpose there have been since 1887 three public vaccinators, one assigned to the eastern, one to the central and one to the western division of the city. These practitioners serve the public at their office in the City Hall every day between 9 and 10, at their residences three nights a week between 6 and 8, and at the houses of citizens in response to special calls. The sanitary officers, in making their rounds, ask if the children have been vaccinated and where they discover this has not been the case, such children are reported to one of the public vaccinators who calls and makes the operation. In 1897, the schools were all visited and the students examined and several thousands were vaccinated. It is our intention to have this repeated next October. The lack of registration of births is a drawback to this work, since it is difficult to obtain a proper list of new born children. The right of the city to enforce vaccination has also been questioned. Though, I believe, the Provincial Board of Health may compel vaccination, it is by no means established that the local board has such powers, consequently if parents refuse the public vaccinator we do not press the case.

LABORATORY WORK.

In addition to other duties, Dr. J. E. Laberge, the physician in charge at the Civic Hospital, acts as civic bacteriologist. He has a small laboratory on the third floor of the City Hall, where he spends some time daily. He examines samples of milk brought in by the milk inspectors and also makes cultures from time to time to discover the presence of contagious disease germs. As his laboratory is very inadequately furnished with appliances and as he is able to be there but a very limited period, no effort is made towards the public analysis of food stuffs. I understand that in Paris there is an immense department devoted to such work. It certainly seems necessary for us to have a chemical and bacteriological laboratory, well furnished, with at least, one competent man giving his whole time to its work. But it is extremely difficult to bring the Council to sanction such an expense. Can you not help us?

STATISTICAL INFORMATION.

The civic committee on hygiene is also in charge of the statistical work at the City Hall. It is empowered to tabulate the mortuary returns, and has recently received from the Legislature certain powers, not yet put into effect by by-laws, to facilitate the collection of data regarding births as well.

It is the desire of our committee to secure from Council at a later date an appropriation that will permit of the taking of a complete civil

census, in order to obtain data regarding the social, economical and sanitary condition of the people. Until this is done we have no reliable basis from which to work and no means of ascertaining whether the efforts put forth by the Health Department are having any appreciable effect in improving the public health. Hitherto, the state of the civic finances has rendered this, like many other reforms, among the impossibilities.

SEIZURES AND CONFISCATION OF DELETERIOUS ARTICLES OF FOOD.

The department has nominally the power to seize and to confiscate articles of food which are deleteriously adulterated or which have become unwholesome and to prosecute the vendors thereof. This power, however, it is extremely difficult to apply. The department has no special inspector charged with the duty of collecting evidence on such infractions of the law. Furthermore, unless it can be proven that the adulteration is absolutely injurious to health, our municipal law has no effect. The sale of adulterated articles may be a fraud upon the public and, as such, punishable under the Dominion Statute, but of this the local board can take no cognizance. Add to this the fact already cited that we have no laboratory for analyses and you will understand why it is that this portion of our duty is almost wholly neglected.

INSPECTION OF MILK.

In the matter of safe-guarding the public against unwholesome milk the municipal machinery is not so badly constituted. There are two competent milk inspectors, young men of recent appointment, both veterinary surgeons with diplomas, both men of energy and devotion to their work. Dr. J. J. McCarrey looks after the western half of the city and Dr. L. J. Demers the eastern portion. Sometimes they change divisions for a month at a time whenever the milkmen get to know them too well. These inspectors visit all milk depots and all premises where milk is kept or sold. They stop and inspect the milkmen's wagons upon their rounds and they take samples and make tests of milk found therein. These investigations, however, are confined to ascertaining the density and richness of the milk. Bacteriological examinations are not made by them. When dissatisfied with the quality of the milk they take action under the law. Since the appointment of the present inspectors the quality of the milk has greatly improved. It has not been necessary this year to take more than one-fourth as many actions against dealers for offering poor milk as during the corresponding period of last year. All parties desiring to sell milk are required to take out a license before doing so. They must agree to permit of the inspection of their premises whether within or beyond the city limits. Our inspectors drive out into the country as far as a horse can take them

and also make occasional trips by rail, but they have no appropriation for this latter purpose. What is lacking is the additional appropriation that would enable them to visit all the stables in the country, whence milk is collected, at least once a year, in order to refuse permits to all such as do not keep their premises in proper condition.

SUPERVISION OF THE DRAINAGE, PLUMBING AND VENTILATION OF NEW BUILDINGS.

A further duty devolving upon the Health Department is the examination of drains, plumbing and ventilation in buildings erected from time to time throughout the city. Theoretically each person intending to erect or repair a building is bound to submit his plans for the approval of the Board of Health where they are supposed to be examined by the Sanitary Engineer and report made accordingly. We have now before Council a new draft of by-law intended to make still more severe the regulations concerning sanitary plumbing. Until within two months, with the exception of the Sanitary Engineer, Mr. Doré, not an employe of the Health Department had any knowledge, prior to his appointment, of plumbing. The two recent appointees, however, on this staff have been journeymen plumbers of experience. Two of the sanitary police visit and examine all new houses and report regarding the same and no new work is permitted to be covered over unless approved. When the work has been finished it is tested by means of smoke, oil of peppermint, water, etc., if not satisfactory the defects must be remedied within a reasonable delay. Here again aldermanic interference is a great drawback. A proprietor fails to conform to the regulations and is reported and threatened with suit. An alderman appears at the City Hall and demands that the case be not pushed and threatens to have the scalp of the Health Officer if he insists upon doing his duty. Many are the cases in the past which have thus been abandoned and we are to-day reaping the results in outbreaks of disease in buildings constructed in defiance of sanitary regulations.

INSPECTION OF SCHOOLS, FACTORIES, WORKSHOPS, ETC.

The sanitary inspectors are charged with the duty of visiting and examining as to sanitary condition, drainage and ventilation, etc., the various schools, factories, workshops, etc., throughout the city. If they are not in proper condition, the proprietor may be compelled to put same into good repair. As a matter of fact, however, these duties have of late years been left to the inspectors appointed by the Provincial Government. It is largely out of the hands of the municipal authorities.

Sometimes a sanitary inspector reports a building to be unfit for human habitation for reason of the fact that it is reeking with infection, is dilapidated or in filthy condition. On order of the Medical

Health Officer the occupants are then required to vacate within 8 days and the reoccupation of the premises forbidden until restored to proper condition. This power is not used as often as it should be. It is very difficult to make out a case in court against the proprietor, and aldermanic interference, is often worked to the utmost. We recently condemned a block on Busby Lane and as it is in my own ward we have been able to press the matter to a conclusion. The block is now being demolished.

PRIVY PITS.

One of the main reforms for which I have been fighting for the past two years and for which I expect to struggle for the remainder of my term, is the abolition of the pit-in-the-ground privy. Even in this year of our Lord, 1900, there are still over 5000 privy pits in the city of Montreal. The by-law regarding this matter requires that the pit be practically water tight ; as a matter of fact not five per cent. of the privies of the city are in conformity with the existing by-law. In the study which I made three years ago of the western part of the city I was able to show that the death rate and the prevalence of contagious diseases followed proportionately the number of privies in various localities. Twice I have introduced by-laws into Council for the total abolition of this abomination and twice have I been defeated. At the present moment I have before Council a compromise measure calculated to tolerate, after May 1st, 1901, none but exceptional cases. The conditions of continuance are these :—No privy pit shall exist except by permission granted by the Medical Health Officer. Said permit shall only be given when, 1st. when it has been conclusively proven that the house cannot contain a water closet or that the insertion of the same would be a menace to the health of the occupants, and, secondly, that the alternative privy conforms strictly with the regulations and is as innocuous as possible. Even this half way measure, with difficulty, we succeeded in passing through the Board of Health, where you would have expected it would have received unanimous support. Should it pass the Council we shall hope in time to so worry the proprietors who tolerate privies, that a large portion of those presently existing will ultimately be abolished.

PUBLIC BATHS.

The maintenance and control of the public baths, such as they are, fall within the powers of this department. At the present time there are three summer baths in operation, one on St. Helen's Island, one in Hochelaga, and one out near Verdun. These baths, two of which are open on the river, are free to the public. Plans are now completed for the construction of a new public bath near the Wellington Bridge, which will be of a more permanent character than its predecessors. This

building will have a concrete plunge bath about 100 feet long by 25 feet wide with shower baths and other modern improvements. Owing to lack of funds, however, no heating apparatus can be installed and consequently, for the present at least, the bath will be available only during the summer months. This building, however, let us hope, is the first step towards the ultimate accomplishment of wide designs for furnishing the working people of Montreal with what in most progressive English cities is regarded not as a luxury but as a necessity.

But these details regarding the duties, organization and defects of the Health Department must have grown wearisome to you, as I have presented very little which was not previously known to you all. If it were possible for you to name a sub-committee of your Society who could spare the time and go carefully over the various activities of the local board, to examine the different services carried on and to suggest ways of improvement, I would gladly lay before my committee at the City Hall, the result of your labours. I cannot, however, bring this paper to a close without frankly presenting before you some of the disheartening features of the situation, not with a view of causing you to conclude that nothing can be done and that therefore, the subject is not worthy of further consideration, but for the purpose of calling up the reinforcements, in order that, the full strength of the opposition being apparent, we may organize in sufficient strength to carry through, in spite of it all, desired reforms to a successful finish.

In the first place let me point out to you that, as the result of ten long years of reckless extravagance the city to-day is compelled to exercise the strictest economy in all departments. We are in the position of a householder who has mortgaged his property so that it demands half of the revenue to meet the annual interest charges. This is most plainly shown by the following figures. In 1889, the total revenue of the city was $2,222,000, and the net debt was about $13,000,000. It required $811,000 for interest and school tax, leaving about $1,410,000 or 63½ per cent. of our entire revenue available for administrative purposes. By 1898, the total revenue had increased to $3,078,000, but the net debt was over $26,000,000. The amount needed to pay the interest and school tax was $1,400,000, the amount available for administrative purposes was $1,576,000 or just about 50 per cent. of the amount collected. Thus although the city in 10 years increased 30 per cent. in population and 15 per cent. in territory, the amount available for the care thereof increased but 11 per cent. during the same time. Think of it! In 1898 we had but $165,000 more to expend on the current administration than we had in 1889, though the citizens contributed $800,000 more in the former than the latter year. As a result the appropriations voted each civic department for annual needs are re-

duced to the lowest minimum of absolute necessity. To maintain the present existing services in a fair degree of effectiveness, let alone make any new improvement, requires all our available funds. It will be four or five years probably, and then only should we have an honest Council during the intervening period, before we may hope to arrive at the point where we shall again have sufficient revenue to provide for ordinary needs.

Again the low estimate of civic duty entertained by many aldermen and by those who elect them, and the apparent unwillingness to engage in serious purification of the staff of civic employes presents many difficulties. A civic employé may be incompetent; you cannot remove him, however, without the approval of the committee. The moment you criticize him, you incur the personal enmity and bitter opposition of some alderman. To touch the employé is regarded as a personal insult to his protector, in return for which the reformer must be prepared to suffer the consequences.

A third difficulty arises whenever we attempt to economize. Where additional appropriation is impossible, we sometimes endeavour to obtain the means for new work by reducing the cost of existing services and here we are met at every turn with obstacles. On my advent to the chairmanship of this Committee, I desired to purchase goods for the department from wholesale firms in order to secure the lowest rates. This was opposed by certain members of my Committee, who claimed to be entitled to name the furnisher, from among their electors, who should supply the goods at his own price. Doubtless the city loses thousands of dollars annually in consequence of such claims for "patronage."

The final drawback which I would cite has already been covered when referring to the execution of existing regulations. I believe that the code of hygienic by-laws on our books is fairly comprehensive; the difficulty lies in putting them into force. Aldermen are supposed to pass by-laws for the protection of the public, as a matter of fact they spend a good share of their time in coming between the law and favoured individuals.

When, therefore, you criticize the Board of Health, as I certainly trust you will never cease to do, kindly remember the limitations under which reformers serve and be as charitable with us as you can. Widespread reformation is not accomplished in a day, but much can be done by keeping constantly at it; and I am confident that if the medical men, in season and out of season, spur on the public to demand that improved measures affecting the public health be passed, that the existing laws be unflinchingly enforced and that the requisite financial support be given to the Health Department there is an era of great advance before us.

ON A CASE OF RETROPERITONEAL LIPOMA (LIPOMA MYXOMATODES) WITH ACCOMPANYING RETROPERITONEAL FIBROMA (CHONDRO-MYXOFIBROMA).

BY

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AND

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Three years ago one of us in these pages discussed at some length the condition of Retroperitoneal Lipoma,* bringing together some 40 cases already on record and describing two cases that had come under his notice. Since that date some half dozen or so more have been placed on record, resembling in all important details those previously described. Briefly, it may be said that these are slowly growing tumours which may attain an enormous size, the largest so far recorded (Waldeyer's case) weighing as much as 63 lbs.; they are situated most often more to one side than the other, are accompanied by little disturbance of general health, save progressive emaciation and eventual dyspnœa, are crossed in general by a length of the large intestine and give signs of fluctuation, so that time and again the first diagnosis is that of ovarian or other cystic growth, until the insertion of the trocar failing to bring away any fluid, this diagnosis has to be modified.

These tumours being so rare it is right to place on record each case that occurs. The following is the history of what is the first case of this nature that has come to operation at the Royal Victoria Hospital, the only case met with so far in our (W. G.'s) practice.

The patient, Mrs. F., æt. 35, first menstruated at the age of 14, and had never been other than regular in her periods, menstruation being unaccompanied by pain. Her first labour was a breech presentation at full term, the second a miscarriage at the third month three years ago, her third and last pregnancy ended 14 months ago.

About a year preceding the last pregnancy the menstrual flow became somewhat profuse and some slight pelvic pain was noted during menstruation.

On admission to the hospital in January, she had but just weaned her baby and had not menstruated for about two years. During this period she has had occasional bearing down pains which since the birth

of the last child had been more severe, while there was distinct "falling of the womb" and occasional frequency of micturition. The protrusion from the vulva was first noticed about three weeks after the birth of the last child and since then had been noticed whenever the patient had been on her feet for any time, and also after straining at stool; there was, however, no difficulty in replacement of the parts.

The respiratory, circulatory and nervous systems were found normal, the urine normal, except for a few epithelial and pus cells. (There was a moderate degree of leucorrhœa.) There was some pigmentation of the navel and also of the mid-line from three inches above the navel to the pubes, while the superficial veins over the chest and abdomen were quite visible.

The abdomen was large, somewhat distended and *fluctuating*. On percussion a clear note was elicited in the right lumbar and epigastric region, in the left lumbar region the percussion note was dull, both when the patient was lying on her back and when she was on her right side. The perineum was partially torn and extensively relaxed, and there was descent of both vaginal walls. The pudenda were in parts dusky in colour. Upon bimanual examination the cervix was found soft, but the vaginal roof was depressed by a firm rounded smooth lobular tumour which was movable. This tumour depressed the uterus to the floor of the pelvis where it was quite movable independently of the tumour. The cervix and os appeared quite healthy. A guarded diagnosis was made of fibromatous growth in the pelvis with some accumulation of fluid of uncertain origin in the abdomen.

Upon January 17th, abdominal section was performed, an incision being made from the pubes to three or four inches above the navel. Upon opening the abdomen there was complete absence of parietal adhesions and it at once became apparent that there were two tumours, the larger one—abdominal in position—giving a sensation as of fluctuation the smaller—pelvic in position—much firmer. Both were obviously subperitoneal as shown by the membrane which covered them, with its network of vessels, and by the fact that the descending colon passed over both in a perpendicular direction. This relationship was especially well marked over the larger abdominal tumour and by the growth the colon was pushed over so as to lie to the right of the mid-line.

These tumours were removed by incision through the peritoneum to the outer and left side. After this incision enucleation proceeded with relatively little difficulty and very little hæmorrhage, the larger tumour being the first to be removed. This lay well over to the left side having completely displaced the intestines to the right and having separated the layers of the descending meso-colon. Upon inspecting

the bed of this tumour it was seen that it had lain close to the lower end of the left kidney, but had not deformed it in any way. At no point was it firmly adherent, being removable everywhere without great difficulty. The sigmoid flexure was depressed into the pelvic cul-de-sac.

The smaller tumour mass lay well within the pelvis more to the right side, it also was not firmly adherent anywhere.

The opening into the peritoneum was closed by a running catgut suture and normal saline solution was left in the peritoneal cavity; the abdominal incision was closed by a triple suture of catgut, linen and silk worm gut. Recovery was uneventful.

To the naked eye the larger tumour resembled a mass of light brownish jelly and was of a jelly-like consistence. A considerable amount of rather glairy fluid oozed slowly from it; it weighed 3½ kilogrammes. The smaller tumour was of a wholly different character, firm and fibroid in appearance, yellowish in colour and weighed 475 grammes, and in parts there were definite hard calcareous areas.

The weight of the larger tumour, if we may so express it, was disappointing; the size was such that no glass vessel in the laboratory could contain it, and when placed in an enamel tin bucket it more than half filled it, and even here, although it was placed in abundant formalin it became distorted by pressure against the sides so that it is now impossible to give the original dimensions. After placing it thus in formalin it hardened with difficulty. Upon attempted dissection, the tissue came away in successive irregular layers, coat by coat, here and there, however, could be seen paler, more opaque, more fatty-looking foci.

Upon microscopical examination the tissue was in the main myxomatous, but everywhere throughout the section could be seen small or larger clusters of fat wells tending to be separated from each other by the great mucoid infiltration. Briefly, the appearance given was that of a tumour primarily lipomatous which had undergone development or reversion into mucoid tissue.

It might be well argued that the main mass of the tissue being mucoid, this tumour should be described as a myxoma; I am led to classify it with the lipomata because of arrangement of the fat cells, that arrangement giving us the impression that these are the older elements in the growth. We seem to be dealing with a lipoma which in the course of development has reverted to a more embryonic type of tissue; and the term "Lipoma myxomatodes" adequately expresses this condition.

The smaller tumour consisted of two lobules of about equal volume, the one firm and globular the other more gelatinous and lenticular, lying over it and above. Of these the latter was an almost pure my-

xoma ; large fat cells were present in scanty numbers in its peripheral portion ; only immediately beneath the thin capsule were they clustered together. The firmer rounded mass was in the main fibrous with some mucoid change—a soft fibroma or myxo-fibroma. The centre had undergone degeneration and necrosis, resulting in the production of an irregular cavity filled with clear fluid. Upon microscopic examination, abundant islets of hyaline cartilage were found scattered throughout the tissue with rarer areas in which the cartilaginous matrix had become impregnated with calcareous salts and osteoid (as distinguished from osseous). No fat cells were recognizable. We were thus dealing with an osteoid chondro-myxo-fibroma.

From a histological point of view this case is peculiarly interesting as an example of the metaplasia of connective tissue. Previous cases have shown that in these large tumours we may have practically every form of tissue, from fibrous connective through pure lipoma, to lipoma complicated by mucinous, cartilaginous and even bony development on the one hand, and on the other to embryonic tissue—to sarcomatous development.

Here the larger tumour would seem to have originated as a fatty tumour, which has assumed a myxomatous or mucinous change, while the other tumour, developed apparently from the same tissue, has remained more fibroid.

It may be added that while the majority of these cases on record show one large mass, a few in which the growths have been multiple and distinct, are on record:—Dreschfeld quotes a case of lobules on the two sides mata containing osseous nodules in which the lobules on the two sides were of independent origin. Spencer Wells' case would also seem to have been made up of large, more or less, separate nodules. In Broca's case there was both a lipoma, weighing about 15 kilos, and in connection with this a fibro-lipomatous nodule, and in Roux's first case, while the note is very brief and imperfect, the lipomatous was stated to be growing in the right iliac fossa in association with a fibroma. Belkowsky's case in its characters most nearly approximates to the one here recorded. In it there was one growth in the right iliac fossa which was of fibromatous nature, while a large lipoma had developed apparently in the meso-colon of the sigmoid flexure and was extending upwards along the line of the left ureter.

Where tumours become so large it is difficult to say with precision the point of origin. The probability here is that both tumours originated within the meso-colon of the lower end of the descending colon. In the paper by one of us, already referred to, attention was called to the fact that these growths might develop in association with the kidney fat. The whole history and appearance of the tumours in this case is against

that origin. It is true that the left kidney was closely pressed upon by the lipoma, but it was not distorted nor firmly adherent, and the fact that the lower and smaller of the two tumour masses was so distinctly associated with the meso-colon lends a distinct support to the view that both had this origin.

It has to be kept in mind that tumours of this order may originate at practically any point beneath the peritoneum. While writing the notes upon this case there were received at the pathological laboratory, portions of a large tumour developing in the anterior abdominal wall. For these we were indebted to W. Jameson, of Rochester, N.Y. The tumour was so firmly adherent to the parietes that it became necessary to remove no small portion of the musculature along with the mass. But upon examination of sections made through the muscle and the tumour, the former is seen to be merely adherent and not infiltrated, and the tumour itself is a well defined myxo-fibroma, curiously like the myxo-fibromatous nodule above described, though without cartilaginous areas. From W. Jameson's description of the relationships found at operation, as again from a study of sections from different portions, the growth clearly originated in the subperitoneal tissue of the abdominal parietes.

Lastly, as to the duration of the growth in these cases. In general these tumours are peculiarly slow-growing; they have been noted frequently for periods extending over from two to seven years or even longer. The absence of systemic disturbance and the soft yielding nature of the tumours renders it possible for them to be present for long without being noticed. In a case such as this where the development has occurred during or after pregnancy, the enlargement of the abdomen might easily be attributed to other causes. Indeed, in this case the patient came to the hospital, not because of the tumour, but because of the falling of the womb. That falling might, it is true, be due to the rupture of the perineum, but on the whole we may attribute it and the bearing-down pains to the presence of the growths. It is quite probable, therefore, taking everything into consideration, that the growths in this case were of more than a year's development and possibly, that the increased menstrual flow with bearing-down pains noted a year previous to the last confinement, were associated with the early stages of the growth. Thus it is quite possible that the duration of growth exceeds two years.

REPORT ON THE CASES OF TYPHOID FEVER ADMITTED INTO THE ROYAL VICTORIA HOSPITAL DURING THE YEAR 1899.

BY

B. D. GILLIES, M.D., Senior Resident Physician.

During the year 1899, there were treated in the wards of this Hospital ninety-eight cases of typhoid fever, sixty-five males and thirty-three females. Of these cases eighty-six were treated to a conclusion; of the remaining twelve cases several were cured, the others are convalescent. They are not included in the present report.

The mortality was higher this year than any other since the Hospital opened, there being seven deaths, or 8.16%. Death resulted in three cases from hæmorrhage, one case from hæmorrhage and perforation, one case from perforation, and in two cases from profound intoxication. On an average, the patients were admitted on the seventh day of the disease.

The following data are the points of interest :—

Age—

The average age of all the patients was twenty-three years, the youngest three and a half years, the oldest fifty-eight.

Arranged in decades, they are as follows :—

Under 10 years	4 cases.
Between 10 and 20	21 "
" 20 and 30	40 "
" 30 and 40	16 "
" 40 and 50	4 "
Over 50	1 case.

Season—

The largest number of cases were admitted during the month of August, the smallest during December.

52.3 per cent. of the cases developed duly July, August and September.

18.4 per cent. during October, November and December.

18.6 per cent. during April, May and June.

11.7 per cent. during January, February and March.

Duration of Cases—

The average number of days in the Hospital was 39.5.

The average duration of fever was 24.6 days.

The longest period of fever was 58 days.

The shortest period of fever was 8 days.

Infection—

In one case a definite proof of infection from milk was obtained.

Five cases were admitted from one family. Defective sewage was known to be present in the house.

In four other cases two or more members of the family were also ill with typhoid fever.

Symptoms—

Onset and Course :

In 95.4 per cent. of the cases the onset was gradual, the most frequent symptoms being: General malaise headache frontal or occipital, anorexia, pain in back and lower extremities, and chilliness. General malaise and frontal headache, with anorexia, were by far the most frequent.

In two cases pain in the abdomen was severe, localised and of sudden onset, simulating appendicitis.

Chills occurred at time of onset or during first week of the disease in 17.4 per cent. of the cases.

Diarrhœa was present at the onset in 20.9 per cent., and persisted throughout the course in 8 per cent. Enemata were given in all cases of constipation.

Epistaxis occurred at onset in 18.6 per cent.

Vomiting was present at onset in 34 per cent. of the cases. In one case it was persistent during the course of the disease, resisting treatment for some days

Delirium was present at time of entry into hospital or during course of disease in 18.6 per cent. of the cases. In nearly every case it was of a low, muttering character.

Eruption :

An eruption was present in 72 per cent. of the cases. In one case it was petechial in character, while in the remaining cases it was of the nature of "rose spots."

The earliest appearance of the rash was on the 4th day of the disease.

The latest appearance of the rash was on the 40th day of the disease.

In one case the rash appeared only during the relapse.

The shortest duration of the rash was three days.

The longest duration of the rash was twenty-seven days.

The average duration of the rash was eleven days.

Spleen :

The spleen was palpable in 67.4 per cent. of the cases.

In one case it was palpable on the first day of the disease.

In another case it was palpable till the fourth day of the relapse, on the twenty-fifth day of the disease.

On the average the spleen remained palpable for twelve days.

The spleen was palpable for only three days in one case, while in another it could be palpated for thirty-two days.

Relapse :

A definite relapse occurred in eleven cases, *i.e.*, 12.7 per cent.

The longest duration of the relapse was twenty-nine days.

The shortest duration of the relapse was eight days.

The average duration of the relapse was eighteen days.

In three cases the relapse was more severe than the original attack.

In one case temperature had been normal for seventeen days when relapse set in, while in another temperature was normal for only twenty-four hours. One case was readmitted to the hospital for typhoid fever after having recovered from an attack four weeks previously.

Fever :

The highest temperature recorded in any of the cases was 106 2|5°.

In one case the maximum temperature was 100 2|5°.

The average maximum temperature in all the cases was 103 2|5°.

The temperature reached 104° or over in 48.8 per cent. of the cases.

Complications—

Digestive System :

Double parotitis developed in one case on the seventeenth day of the disease.

Cholecystitis developed in three cases.

Suppurative cholecystitis, with gangrenous ulceration of the gall-bladder and cholelithiasis, was present in one case.

Meteorism was marked in 25 per cent. of the cases.

Perforation of the bowel occurred in two cases, in one on the tenth day and in the other on the thirteenth day of the disease.

Intestinal hæmorrhage occurred in nine cases. In three cases it was the cause of death; in one case it preceded perforation; in the remaining cases recovery ensued.

Circulatory System :

Systolic murmurs developed during course of disease in five cases.

Femoral phlebitis occurred in two cases and brachial phlebitis in one case.

Respiratory System :

Acute bronchitis was present at onset in 14.9 per cent. of the cases.

Broncho-pneumonia developed in one case.

Pulmonary œdema was present in one case.

In two cases pleurisy with effusion developed.
Tuberculosis was present in one case.

OTHER SYSTEMS :

Periostitis developed during the attack in one case, and in the early stage of convalescence in a second case.
Abscesses developed during convalescence in one case.
Myositis of triceps and deltoid muscles developed on seventy-second day of the disease.
Suppurative otitis media was present in three cases.
Staphylococci were present in pus in one case.
Acute nephritis occurred in four cases. In all cases it developed during the active stage of the disease.

WIDAL TEST :

This test has been employed in all the cases, and in only four cases was the reaction negative throughout the course of the disease. Of these, three cases were regarded as abortive typhoid. The temperature remained elevated in the most prolonged case for ten days. No rose spots were present. The reaction appeared in one case as early as the fourth day of the disease. In one case it was not positive till the eighteenth day. It was present on the average on the eighth day. The reaction has been tried in six cases at date of discharge from the hospital, and in every case has been positive. This is receiving further investigation.

Synopsis of the Fatal Cases.

CASE I.—H. T. (Case No. 3645.) Male, ÆT. 32, commercial traveller. Admitted Jan. 10th, 1899, on the eighth day of the disease, complaining of headache, general malaise, anorexia and insomnia, which gradually and progressively increased in severity. No delirium. On admission, he was a well-nourished man; mental state good; pulse 96; good volume and fair tension; abdomen somewhat distended; rose spots present: Widal reaction positive.

SUBSEQUENT EVENTS—On the ninth day the patient's condition was satisfactory except that the distension of the abdomen persisted. The following morning patient suddenly had a hæmorrhage from the bowel, not large in amount; condition fair. Through the day the hæmorrhage recurred, and towards evening patient became weaker; temperature became subnormal; pulse 100 to 120. Abdominal distension increased. On the eleventh day of the disease there was no recurrence of the hæmorrhage, but patient complained of severe pain in the epigastrium; distension persisted to the same degree as on previous day; pulse weaker, 88 to 112; temperature remained below 100° throughout the day. The patient's condition was much worse the following day; distension ex-

treme; pulse rapid and weak, 120 to 150; face dusky; occasional sharp pain in the abdomen. The mental condition was good. Towards night patient had a slight intestinal hæmorrhage; patient became restless; extremities were cold; pulse imperceptible. Death ensued on the twelfth day of the disease.

Cause of death—Perforation with hæmorrhage.

Case II.—J. R. (Case No. 3647.) Female, Æt. 18, servant. Admitted Jan. 10th, 1899, on the eighth day of the disease, complaining of headache, anorexia, insomnia and diarrhœa. The patient had been delirious since the fourth day of the disease. On admission the patient was delirious, but did not attempt to get out of bed. Pulse rapid and of low tension, 100 to 120; abdomen distended; rose spots present, Widal reaction positive; diarrhœa was present.

Subsequent Events—The patient's condition improved till the morning of the eleventh day of the disease, when she had an intestinal hæmorrhage. Temperature fell rapidly and became subnormal; pulse 88 to 120. The condition of patient improved slightly during the day. Vomiting of bile-stained mucus and curdled milk occurred several times in the next twelve hours. The hæmorrhage recurred on the morning of the twelfth day, but the general condition had improved. Another hæmorrhage occurred a few hours later, followed almost immediately by a chill, after which temperature rose to 104°; pulse 122. No jaundice. No pain in abdomen. The hæmorrhage again set in towards morning, and blood oozed from the rectum throughout the night. Pulse rate 160. On the thirteenth day the patient vomited bile-stained fluid on several occasions. The oozing from the rectum ceased this morning, but a few hours later the patient had a profuse hæmorrhage. Pulse imperceptible. Extremities and lips cyanosed. Patient died on the thirteenth day of the disease.

Cause of death—Intestinal hæmorrhage.

Autopsy showed presence of two ulcers in ileum, numerous ulcers in carcum, and a few in colon. The large intestine was filled with blood.

Case III.—E. M. (Case No. 3833.) Male, Æt. 34, farmer. Admitted March 20th, 1899, on the sixth day of the disease, complaining of frontal headache, malaise, anorexia, and diarrhœa. On admission he was a well-nourished man; rather dull and apathetic; tongue dry and brown; slight abdominal distension; no rose spots; Widal reaction negative. Temperature 104°. Pulse 100.

Subsequent Events—The following day rose spots appeared over the abdomen, but the Widal reaction was not positive till the eighth day. Diarrhœa slight, abdominal distension was not marked. On the tenth day of the disease patient had a slight intestinal hæmorrhage. Pulse and temperature were not affected. Condition was satisfactory till the

thirteenth day of the disease at 5 p.m., when the patient began to complain of severe abdominal pain, situated chiefly in the right side of the abdomen. Half an hour later patient had a large, liquid stool, slightly blood-tinged. The abdominal pain was relieved and the distension to a large degree disappeared. Pulse at 6 p.m., 130; temperature had dropped from 102 4|5° to 100 4|5°. Three hours later, pulse 136; temperature 103 2|5°. At 1 a.m. on the fourteenth day patient vomited. No tenderness of the abdomen present, no distension, and no rigidity. The vomiting persisted till morning. Patient began to hiccough about 3 a.m. Pulse 120 to 124; temperature 100° at 6 a.m. At 8 a.m. there was slight pain in the abdomen, which was somewhat distended. Resistence was felt on the left side of the abdomen, and slight rigidity over the lower part of the abdomen on the right side. Liver dulness 1½″ to 2″. No collapse. Mental state fair. At 8 a.m. temperature 99; pulse 104. Slight lividity of lips. Operation was decided upon and performed at 10 a.m. Free turbid fluid was present in peritoneum, not localised. The visceral and parietal peritoneum were injected. Three inches from the cæcum a pin-hole perforation was found. No adhesions about the opening. The perforation was closed by three through and through sutures, and these with bowel were inverted and closed in with three rows of Lembert sutures. The abdomen was irrigated with saline solution and drainage provided for. Vimiting persisted after operation. Pulse became weak and rapid, 136 to 146. The patient died ten hours after operation. Cultures from peritoneal fluid showed the presence of bacillus coli and staphylococcus pyogenes aureus.

Cause of death—Perforation.

Case IV.—J. D. (Case No. 4064.) Male, Æt. 24, laborer. Admitted July 17th, 1899, on the first day of the disease, complaining of headache, loss of appetite, pains in back and legs. On admission a fairly nourished man; lips cyanosed; mental state dull and listless; abdomen somewhat distended; no tenderness; no rose spots; pulse irregular and somewhat accelerated, 88. A rough presystolic thrill palpable at apex, and on auscultation a very harsh presystolic murmur followed by a blowing systolic murmur were audible at apex.

Subsequent Events—The course of the disease was uneventful during the first two weeks. Widal reaction was positive on the ninth day and rose spots appeared on the tenth. No delirium. No distension of the abdomen. On the night of the fifteenth day of the disease the patient had a small intestinal hæmorrhage. Temperature fell rapidly and became subnormal; pulse remained of fair volume and tension and did not increase in frequency, 84. On the sixteenth day the patient's condition was fair. There was no recurrence of the hæmorrhage. Towards evening the patient became restless, and perspired freely. Tem-

perature 102; pulse 100. At 3 a.m. on the seventeenth day patient had a profuse hæmorrhage. Pulse became weak and rapid, 132. Four hours later another severe hæmorrhage occurred. Patient became collapsed. Hæmorrhage recurred at intervals throughout the night, and on the eighteenth day patient's pulse was very weak, 100 to 126; respirations sighing; extremities cold; temperature subnormal. No hæmorrhage occurred throughout the day. On the nineteenth day hæmorrhage recurred on two occasions. The pulse became imperceptible, and patient died.

Cause of death—Intestinal hæmorrhage.

Autopsy showed extensive ulceration in the ileum and cæcum. Ileum and colon contained large amount of blood. Spleen and gall-bladder gave a pure culture of the typhoid bacillus.

Case V.—J. B. S. (Case No. 4196.) Female, Æt. 31. Admitted Aug. 7th, 1899, on the twelfth day of the disease, complaining of fever, diarrhœa, pain in the abdomen, and chills. Patient had left Liverpool on the first day of the disease, and arrived in Montreal on the twelfth day. On admission, patient fairly nourished; dull and listless; no delirium; marked cyanosis of lips and tips of fingers; pulse 130; tongue dry and brown; rose spots absent; abdomen was distended and tender throughout; no rigidity; Widal reaction was positive.

Subsequent Events—During the four succeeding days after entry pulse was rapid and weak, 120 to 148. Temperature seldom reached 101°. Diarrhœa persisted and meteorism obstinate; mental condition poor. On the seventeenth and eighteenth days of the disease the temperature remained between 102° and 103°, resisting sponging; pulse 130 to 160. The patient had a severe chill on the evening of the eighteenth day; temperature 105 2|5°; pulse very weak; stools passed involuntarily; patient became semi-stuporose. Temperature reached 106 2|5° on the morning of the nineteenth day, but gradually declined throughout the day; pulse rapid and slightly irregular, 120 to 140. On the twentieth and twenty-first days of the disease the temperature ranged between 99° and 102°; pulse 120 to 140. Diarrhœa persisted and distension was marked; no jaundice; liver was not palpable. On the morning of the twenty-second day the patient had another severe rigor; temperature rose to 104 3|5°; pulse 144; four hours later temperature 105 2|5°; pulse 160. The patient became semi-stuporose, the temperature steadily declined and in twelve hours became normal and remained so till time of death, which took place on the twenty-third day of the disease. The respirations had increased in frequency on the twenty-third day, and on examination a small area of dulness was found over base of right lung posteriorly. Blowing breathing was present over dull area.

Cause of death—Toxæmia.

Case VI.—M. O'G. (Case No. 4488.) Female, Æt. 21, housemaid. Admitted Nov. 27th, 1899, on the seventh day of the disease, complaining of headache, general malaise, pain in back, and feverishness. On admission delirium was present; pulse 112; tongue moist, coated with a brownish fur; abdomen distended; rose spots present; Widal reaction not positive.

Subsequent Events—Delirium became more pronounced, and temperature ranged between 100° and 105° during eighth, ninth and tenth days; pulse somewhat irregular, rate 96 to 126; Widal positive on tenth day; abdominal distension present. On eleventh and twelfth days the temperature was more elevated; pulse more rapid, 110 to 136, and delirium almost constant. The following day the condition was more severe; the temperature reached 105 2|5°; the pulse was rapid and irregular, 120 to 140. Pulmonary œdema complicated the condition and patient died.

Cause of death—Toxæmia.

Autopsy showed swelling of Peyer's patches from three feet above ileocæcal valve. Ulceration in no case had advanced to a marked degree. Spleen greatly swollen, soft and diffluent. Cultures from spleen and mesenteric glands showed typhoid bacillus.

Case VII.—W. D. (Case No. 4550.) Male, Æt. 42, blacksmith. Admitted Dec. 22nd, 1899. The day of the disease could not be definitely determined as patient was in a stuporose condition from the time of entry into the hospital. On admission, mental condition poor; no delirium; tongue dry and brown; abdomen distended; rose spots present; Widal reaction was doubtful.

Subsequent Events—Patient remained in a dull stuperose condition till towards the evening of the day of admission, when he became somewhat restless and slept poorly during the night. Twenty-seven hours after entry patient had a profuse intestinal hæmorrhage. Temperature dropped rapidly and became subnormal; pulse rate increased to 140. The hæmorrhage recurred frequently during the day. The extremities became cold; pulse towards evening became very thready. Throughout the night and the following day hæmorrhage persisted, and the patient died on the evening of the third day after admission, within thirty hours of the time of appearance of the hæmorrhage.

Cause of death—Intestinal hæmorrhage.

Autopsy showed extensive and advanced ulceration of Peyer's patches in the lower part of the ileum, also of the solitary follicles in the cæcum and ascending colon. The seat of the hæmorrhage was not recognized. A large amount of blood was present in the last four feet of the ileum. The spleen and mesenteric glands were swollen and pulpy.

Cholelithiasis with Cholecystitis Complicating Typhoid Fever.—Cholecystotomy.—Recovery.

C. H., Æt. 28, student. Admitted October 11th, 1899, on the second day of the disease, complaining of general malaise, pain in back, and feverishness.

Family History.—Negative.

Past History.—Patient had measles and whooping cough when a child; pneumonia when fifteen years of age. From two years of age till twelve he suffered from "weakness of back," preventing him from stooping to pick up objects. Past history otherwise negative.

Present Illness.—One week ago patient began to feel ill. He suffered from pains all over his body, especially in the back of the head and neck. Three days later he began to feel feverish, and appetite became poor. There was no vomiting, but constipation obstinate. No chills nor chilliness. No delirium.

On admission, temperature was 99.6°, pulse 84. The patient was a poorly nourished man; expression dull, and mental condition apathetic. Chest long and narrow, expansion equal. No adventitious sounds audible in the chest. The abdomen somewhat retracted; no rose spots; slight tenderness in umbilical region. Liver and spleen not palpable.

On the eighth, ninth and tenth days of the disease patient's condition remained much the same as above noted. The temperature varied from 99.8° to 102.2°; pulse 64 to 96. There was some retention of urine during this time. Rose spots appeared on the tenth day. Constipation was relieved by enemata. On the twelfth day the Widal reaction became positive, and the following day the spleen was palpable. Temperature 99.2° to 102.2°; pulse 66 to 84. During the next three days the patient felt fairly comfortable. Temperature remained the same, and pulse not accelerated. No abdominal distension was present, no pain nor tenderness. On the seventeenth day of the disease, about 5.30 p.m., the patient began to complain of abdominal pain. This was at first situated in the middle line about two inches below the ensiform cartilage. Very soon, however, the pain was referred to the right hypochondrium in the nipple line, and had increased in severity. It persisted only for a short time, and two hours later the patient felt comfortable. The pulse and temperature remained unchanged. Locally there was slight tenderness, no mass and no rigidity. At 9 p.m. the patient was nauseated and vomited. The vomitus, about ℥iv. consisted of curdled milk streaked with blood. At 9.40 p.m. a severe rigor set in lasting fifteen minutes; temperature rose from 100.4° to 104°; pulse 100. At 10.15 p.m., temperature 105°; pulse 100; respiration 24. The chill was followed by profuse perspiration. Locally the tenderness had increased, and slight rigidity could be detected in the upper part of the abdomen on the right side in the

nipple line, beginning just below costal margin and extending downwards a distance of 3″ by 2″ in width. At 11.30 p.m., temperature 100 4|5°; pulse 90. No mass was palpable; rigidity well marked and percussion note slightly higher pitched over a small area extending 1½″ downwards from costal margin in mammary line. Half an hour later the patient had a second rigor; temperature rose to 104.4°; pulse 102. From this time till morning the pain diminished; pulse and temperature declined. On the eighteenth day patient's condition was somewhat improved; tenderness less marked, and rigidity only slight; no tumor palpable; no dulness over point of greatest tenderness. Urine contains a trace of bile. The following day the conjunctiva and skin icteroid; pain absent; tenderness slight; urine deeply bile-stained. On the twentieth day the general condition improved; pulse 76 to 84; temperature 99.4° to 101.4°. Jaundice had deepened; no pain or tenderness. Two days later the jaundice was much the same. Slight tenderness was present about 1″ to the right of the umbilicus; no pain. On the next day, the twenty-third day of the disease, the tenderness was still present in the same region on deep palpation; jaundice persisted; bile was present in the urine; stools clay colored. The following day condition much the same; temperature 102.2°; pulse 88; tenderness less marked; jaundice less intense. On the twenty-sixth day the jaundice was much less marked, and tenderness had entirely disappeared from the abdomen. The temperature was somewhat more elevated this day than at any time since the seventeenth day—103.8°. On the night of the twenty-seventh day the patient had a profuse perspiration. On the twenty-ninth day the pain recurred in right hypochondrium; patient complained of chilly sensations, but did not experience a definite rigor; urine contained bile; jaundice was slightly less marked. The following day pain and tenderness were still present; temperature intermittent, 97.4° to 101.4°; pulse 72 to 90. Two days later the pain became very acute, and tenderness had increased; jaundice present; temperature 103.4°; pulse 104. The following day the patient vomited; tenderness was very pronounced. Examination of blood shewed presence of slight leucocytosis, 10.000 white corpuscles per c.mm. Operation was decided upon, and was performed on the thirty-fifth day.

Operation.—A longitudinal incision was made parallel to the right rectus beginning at level of ninth costal cartilage and extending downwards 4″. The liver was visible at the costal margin covered with inflammatory lymph. The gall-bladder was somewhat enlarged and firmly adherent to under-surface of liver. The adhesions were separated and the gall-bladder drawn into the wound. At the neck of the gall-bladder a stone was felt. On incision into the gall-bladder the inner surface of its base was found dark and gangrenous for about 1½″ in circumference,

and on the roof and floor internally were seen two small areas about one cm. in diameter, where the walls had nearly ulcerated through. Pus exuded from these gangrenous edges. The gall-bladder was now sutured circularly to the parietal peritoneum with silk sutures. One stone the size of an almond was removed and also two irregular smaller pieces found at the junction of the cystic duct with the gall-bladder. One additional silk suture was put into the lower edge of the gall-bladder, as a support. Three pieces of iodoform gauze were packed around the gall-bladder, and a rubber drain was inserted into the bladder itself. One and a half inches of the gall-bladder remained above the edge of the peritoneum. Silkworm gut sutures were introduced into the lower $3\frac{1}{2}''$ of the wound. The patient left the operating room in good condition. The next day the patient felt comfortable, and also the day following. The wound discharged pure bile, the stools were of slightly brownish color, and no bile in the urine. On the fifth day after operation the wound was dressed; the three pieces of iodoform gauze were removed. The gall-bladder looked healthy. No pus was present. The rubber drain was still left in, and dressing was the same as at time of operation. Two days later the wound was again dressed. Discharge of bile less free. Gall-bladder was healthy looking, and one piece of iodoform gauze was left in below it. One week later the sutures were removed and iodoform gauze left out. The patient's condition was improving steadily, there having been no elevation of temperature since the day preceding first dressing. Stools were of normal color, and bile absent from urine. The patient improved steadily; the amount of bile discharged from the incision diminshed. One month and two days from the time of operation the fistula was closed, and patient made an uninterrupted recovery.

TABLE OF CASES OF TYPHOID FEVER

ADMITTED INTO THE ROYAL VICTORIA HOSPITAL DURING THE SIX YEARS ENDING DECEMBER 31ST, 1899.

YEAR.	NUMBER OF CASES.	NUMBER OF DEATHS.	PERCENTAGE OF MORTALITY.
1894	84	3	3.5
1895	84	4	4.7
1896	72	0	0.0
1897	75	7	9.3
1898	93	4	4.3
1899	86	7	8.3
Totals	494	25	5.00

CAUSES OF DEATH IN 25 CASES.

	1894.	1895.	1896.	1897.	1898.	1899.	Percentage Mortality.
Perforation		3		2	1	2	1.6
Intoxication	1			2	2	2	1.4
Hæmorrhage	1			1	1	3	1.2
Septico-Pyæmia		1					.2
Suppurative Cholecystitis				1			.2
Broncho-Pneumonia	1						.2
Abdominal Distension				1			.2

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Simple or Round Ulcer of the Duodenum.

FRANCIS P. KINNICUTT, M.D.—"Simple or Round Ulcer of the Duodenum."—*Jacobi Festschrift.*

Kinnicut reports five cases of this somewhat rare disease, and gives an interesting resumé of existing knowledge of the subject. The frequency of the disease is difficult to estimate during life owing to uncertainty of diagnosis, but from large numbers of post-mortem records, it would seem that .4% of persons dying from all causes present cicatrisation or open ulceration of the duodenum. The pathogeny and pathology of duodenal ulcer correspond in the main with those of gastric ulcer. The digestive action of the gastric juice is universally accepted as the essential feature in its production. Almost without exception it lies between the duodenal orifice and the papilla of the bile duct, *i.e.*, before the acid juice becomes neutralised by the alkaline secretion of the liver. A hyperacid gastric juice has not been shown to be present sufficiently constantly to enable any statement to be made in regard to its influence, and in a few instances a subacidity has been demonstrated. Compared with gastric ulcer, the duodenal ulcer is found frequently in the new born, and in males rather than females in the proportion of 3.9 to 1, a ratio the reverse of that in gastric ulcer, in which the cases in females preponderate in the ratio of three to one.

The occurrence of severe hæmorrhage, melæna neonatorum, is a frequent symptom in the new born. Landau believes the condition to be due to thrombosis of the umbilical vein, with embolism and necrosis of the mucous membrane. Boas ascribes the frequency of the disease in men to the abuse of alcohol and tobacco, basing his belief on the experiments of von Mering and Moritz on dogs. These observers have shown that water is rapidly expelled from the stomach to the duodenum, and although alcohol is directly absorbed from the stomach, yet much of it passes directly on, whilst the absence of chyme allows of a direct irritat-

ing action of this agent. Kinnicutt believes alcohol to be a distinct predisposing cause of duodenal ulcer, and severe symptoms may be precipitated by its abuse.

The presence of duodenal ulcer in burns is probably to be ascribed to sepsis with small extravasions of blood in the duodenal mucous membrane, such as are frequently seen in general sepsis. The subsequent digestive action of the juice completes the process. In this connection it is interesting to note that Shaw and Perry found duodenal ulcer almost as frequently with general sepsis as with burns, and again, duodenal ulcer of late years has become much rarer, corresponding to the improved treatment of wounds and the diminution of sepsis.

Among other diseases with which duodenal ulcer has been found associated, and variously regarded as predisposing causes, are nephritis, tuberculosis, cardiac disease, erysipelas, trichonosis, pemphigus and frost-bite. In renal disease it seems probable that associated vascular change is the most rational explanation of the combination.

The complications of duodenal ulcer are involvement of the bile ducts in the cicatricial tissue of healed or healing ulcers, a result noted by Collin in three of two hundred and sixty cases. Dilatation of the stomach may ensue from contraction of the pylorus. The gravest complication is perforation, and this accident occurs probably twice as often as in gastric ulcer. In 69 of Collin's cases the perforation was on the anterior wall, and only in thirty on the posterior.

The differentiation of duodenal from gastric ulcer is believed to be impossible in the majority of instances. The principal symptoms are pain, vomiting and hæmorrhage. Although the first prominent symptoms are often those of perforation, yet a careful study often shows the preceding presence of well-marked symptoms. Some writers state that the pain which is present two or three hours after food ceases with the further ingestion of food, the explanation offered being that the pylorus closes from the irritation of food in the stomach. In Kinnicutt's cases pain was a more of less constant feature, and was uninfluenced by the further ingestion of food; in this latter respect there is a marked contrast with gastric ulcer. A tender point to the right of the umbilicus between the umbilicus and the costal arch is a sign of some value when present.

Examination of the gastric contents is of but little positive value, both hypochlorhydria and hyperchlorhydria having been found. Vomiting is not infrequent, and when not attributable to the reflex influence of pain, may be explained by an accompanying gastritis or by dilatation consecutive to gastric circitrisation. A study of the vomited matter may occasionally throw some light on the condition. Ewald in one

instance found the vomit to consist first of food, then bile, and lastly blood. Such a sequence must, however, be very unusual.

The form of hæmorrhage is of but slight differentiating value—it may appear as melæna, or hæmetemesis, or both.

By most writers the prognosis is regarded as unfavorable, the condition tending to deep ulceration or to contraction. Boas, however, claims that the prognosis is more favorable than in gastric ulcer if the danger of hæmorrhage be excepted.

The Oliver-Cardarelli Sign (Tracheal Tugging) in Two Cases of Mediastinal Tumor.

MAX AUERBACH.—"The Oliver-Cardarelli Sign (Tracheal Tugging) in Two Cases of Mediastinal Tumor."—*Deut. Med. Woch., Feb. 22, 1900.*

Auerbach reports from Fraenkel's clinic two interesting cases of well-marked tracheal tugging in mediastinal tumor. This sign, now well recognized as of great value in the diagnosis of aneurism, has hitherto not been definitely established as occurring in tumor. Fraenkel, however, pointed out (*Deut. Med. Woch., 1899*) that the sign might occur in mediastinal tumor, and referred to a case in which it was present, although the conclusive evidence of a post-mortem examination was lacking. Fraenkel points out that a tumor to produce tracheal tugging must have a special site, either pressing the arch against the bronchus, or lying between the under part of the arch and the trachea, or, lastly, in such a position as to unite the convexity of the arch with the trachea.

Auerbach's first case was one of a primary carcinomatous growth in the stomach, with metastases in the lymph glands of the thorax and supraclavicular regions. During life there was a well-marked area of dulness over the sternum with dyspnœa and cyanosis on exertion, and cachexia was well marked. On drawing up the cricoid cartilage, a well-marked downward impulse was felt with each cardiac beat (Oliver's sign). On drawing the thyroid to the left of the median line, a distinct impulse from left to right was perceptible, but on pushing the cartilage to the right no impulse could be felt (Cardarelli's sign). The autopsy confirmed the diagnosis. The mediastinum was infiltrated by a nodular growth, and a small portion of it, three or four cm. thick, lay between the left bronchus and the aorta.

It is obvious that the small growth served to transmit the pulsation of the aorta to the trachea, and so produced the distinct tracheal tugging noted during life.

In the second case the diagnosis was not at all clear, and lay between a solid tumor and aneurism.

The patient, a male of 48, while in his usual health was suddenly

seized while in bed with cough and expectorated a small quantity of blood. Later attacks of painful dyspnœa lasting half an hour at a time came on, but there was no marked emaciation. Beneath the left clavicle there was a slight prominence with marked dulness extending from the mid-sternal line to the lateral wall of the chest, and reaching from the clavicle to the heart. Over the dull area the breathing was much enfeebled, and on deep inspiration a distinct tracheal stridor was heard. The sputum was mucous with single purulent and dark-red portions. There was distinct downward pulsation of the trachea.

In favour of a tumor of the lung extending to the mediastinum was the sudden onset with pain and hæmoptysis, but on the other hand there was no marked degree of cachexia. Against aneurism were the absence of any etiological factors such as syphilis, strain or alcoholism, and in addition there was no pulsation over the tumor.

The autopsy revealed a bronchial carcinoma of the lung with metastases in the bronchial lymph-glands. Between the bronchus and aorta was a packet of glands the size of a wulnut, uniting the aorta with the bronchus, and so transmitting the pulsations of the one to the other.

In both instances the second of Fraenkel's suppositions was realised, viz., a growth between the bronchus and aorta, and in both instances the growth in this site was of small size, hardly greater than a walnut.

The significance of Oliver's sign is not materially weakened by these observations, as only in a trifling number of cases of solid tumor can the connection between the aorta and bronchus be so intimate as in the cases just quoted. The sign, however, cannot be looked upon as pathognomonic of aneurism, although the probabilities of a growth being aneurismal are much increased when this sign is present.

A New Method of Determining Clinically the Limits of the Lung.

M. E. Weisz.—"A New Method of Determining Clinically the Limits of the Lung."—*Deut. Med. Woch., March 1, 1900.*

During examinations made to test the sensibility of the chest wall by Weber's compass, Weisz noticed that certain portions of the chest wall bulged distinctly on phonation, especially on using words containing the consonants *t* or *d*. The elevations thus formed in the intercostal spaces are particularly noticeable in front, in the second, third and fourth spaces, near the nipple and parasternal lines; posteriorly between the axillary and scapular lines; and lastly along the upper borders of the liver and spleen. The phenomenon ends precisely at the points where the upper limits of dulness of these organs begin.

These intercostal elevations or arches, which are obviously due to pulmonary expansion, only appear under the influence of energetic phonation. They are, in consequence, less marked in ascites, in compression of

the lung, in paralysis of the glottis or in intense dyspnœa. On the other hand, the writer has satisfied himself that the phenomenon can be seen over a pleuritic effusion; consequently, the line at which undulatory movements cease marks the level of contact of the liver and pleural effusion.

The phenomenon described may be observed in any position of the body, but the most favorable method of making it out is during dorsal decubitus. If the side or back is to be observed, the patient lies on his side or abdomen. Weisz believes that an application of his method may prove of service in determining accurately the line of demarcation of the lung and liver.

F. G. Finley.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

The Modern Treatmont of Angular Curvature.

HOFFA. "Die Moderne Behandlung der Spondilitis."—München, Seitz, und Schauer, 1900, 28s, 10 abbildungen. *Centralblatt f. Chirurgie, April 28, 1900.*

After giving the important symptoms of spondilitis, it is recommended that in the progressive stages of the disease, that in the majority of cases, the patient be kept in the horizontal or a reclining position. When the disease involves the cervical or upper dorsal vertebræ, a Phelp's bed or extension with a jury-mast should be applied, and the horizontal position maintained. As soon as there are clear indications that consolidation has begun, the upright position may be allowed, and the vertebræ supported by a removable plaster jacket or a corset made of cellulose, celluloid, wood, or other material. This should be worn for at least a year.

Great stress is laid upon the importance of an early diagnosis. Each symptom should be carefully studied and a differential diagnosis made between skoliosis, rheumatic spondilitis, and rickets. A faradic current is helpful in making an early diagnosis, pain being felt more acutely over the diseased spot.

Abscesses are treated by puncture and iodoform injection and only opened when very long persistent, when spontaneous rupture is imminent or when they threaten to destroy life as in the case of a large retropharyngeal abscess or when they cause high fever.

Paralysis should be treated by extension or forcible straightening. Calot's method may be considered.

Operative treatment should be reserved for those cases that have resisted all other methods, and the continuance of paralysis after a prolonged trial of extension and forcible straightening. In 70 cases of operation by different surgeons 50 per cent. died.

Anæsthesia from Cocaine introduced into the Sucarachmoid Space.

TAFFIER. "Anæsthésie Médullaire Chirurgicale par Injection Sous-Arachnoïdiénne lombaire de Cocaïne; Technique et Resultats." *La Semaine Medicale, 16 Mai, 1900.*

We gave our readers a brief summary of this method of using cocaine in the issue for December, 1899; since then a number of surgeons have

given the method a trial. So far as published reports go, the subarachnoid injection of cocaine has given a satisfactory anæsthesia of the lower half of the body, and we have not seen any published reports of failures or untoward results following its use in this manner.

Taffier says that he has now operated 63 times on the lower extremities, perineum, abdomen, rectum, and genito-urinary organs, male and female. He claims to have obtained absolute analgesia with satisfactory recovery in each instance.

His technique is as follows:—He uses a Pravaz syringe, sterilized, and a platinum needle 9 centimetres long, with an external diameter of $^{11}|_{10}$ of a millimetre, and an internal diameter of $^{8}|_{10}$ of a millimetre. He finds this sufficiently strong not to bend or twist if it hits against one of the lamina before entering the spinal cord. The cocaine solution is sterilized by raising it to a temperature of 80° C. for three hours. This operation, repeated five or six times, insures sterilization of the solution without lessening its therapeutic power.

The patient may be seated with the arms thrown forwards. The back is thoroughly washed with warm water, soap, and a brush, and then with alcohol. A line drawn across the back from the highest point of the crest of the ilium, on the one side, to a similar point on the opposite side, will pass just across the upper border of the spine of the fifth lumbar vertebra. When this point is determined by the finger, the patient is instructed to bend forward and the needle is thrust directly into the lumbar canal between the fourth and fifth vertebræ. The nerves lie laterally and if the needle is kept directly in the middle line they will not be injured. A drop or two of cerebrospinal fluid should be allowed to escape. This demonstrates that the needle is in the subarachnoid space, and the fluid occupies the lumen of the needle doing away with the danger of air being forced into the spinal canal. The needle should be quickly withdrawn and the opening closed with sterilized collodion. Taffier uses a 2 per cent. solution, but injects very little cocaine only 0 gr. .015 milligr.—so little that one is inclined to wonder if the cocaine used has much to do with the result, or whether sterilized water or normal saline solution would not bring about the same effect. In from eight to ten minutes after the injection the patient complains of tingling and numbness, at first in the feet and then in the legs. The operation may now be begun. Sensibility to pain and heat is gradually lost while the sense of contact or touch persists. In about ten minutes after the injection is made, analgesia is complete ; a leg may be amputated without the patient being conscious of any pain. The analgesia persists for an hour or an hour and a half.

Taffier does not advise this method of using cocaine in children, nor in hysterical adults. The use of cocaine in this way does not interfere

with the administration of ether if the subarachnoid injection for any reason fails to produce the desired effect.

Peritonitis from Perforating Duodenal Ulcer.

Vinci (Bruxelles). "Péritonite par perforation. Ulcère du duodénum." *Annales de la Société Belge de Chirurgie, Avril, 1900.*

The patient, aged 32, journalist, was admitted to the hospital on the 17th March, 1900. She complained of painful points over the left side of the abdomen which had been present four or five days. She was habitually constipated. Two days before admission to the hospital she had vomited twice, the vomit being composed of milk. The slightest motion increased the pain. The abdomen was distended, the liver pushed up, and respiration was superficial, forty-eight to the minute. Pulse 120. Temperature $101^{2}/_{5}$° F. A diagnosis of intestinal obstruction was made and a large enema ordered. This was followed by three liquid stools.

During the following two days the condition remained much the same; there was no vomiting. On the fourth day after admission her pulse was 112, temperature $99^{3}/_{5}$° F., and the abdomen distended. Patient passed three small stools. After consultation it was decided that the case was one of intestinal obstruction and it was transferred to the operating room. It was then decided to perform a right lumbar colotomy and to open the ascending colon.

When the peritoneum was opened a quantity of gas escaped and the lower abdomen became softer. It was then recognized that there was present an acute peritonitis and a median abdominal incision decided upon, the lumbar opening being reserved for the insertion of a drainage tube. When the abdomen was opened a large quantity of serous fluid escaped, and the intestines were observed covered with lymph, but no trace of fæcal matter. The abdominal cavity was washed with normal saline solution and a second drainage tube inserted in the left lumbar region; a third inserted into Douglas' *cul-de-sac* through the vagina; a fourth drain was passed from within outwards to the right of the coccyx; a fifth drain inserted into the superior abdominal region through the abdominal wound. The patient died the same evening.

At the autopsy a large collection of serum and fæcal matter was found occupying a space bounded above by the diaphragm and left lobe of the liver, and below and in front by the left half of the transverse colon and the anterior abdominal wall, and behind by the anterior wall of the stomach. Only a small quantity had escaped into the lower abdomen. On further examination a round perforated ulcer was found in the anterior wall of the duodenum, 1½ centimetres from the pylorus.

The edges were clean and not injected. The mucosa in the neightborhood did not present any well defined alteration.

A very remarkable history! A very remarkable diagnosis! A very remarkable operation! Most thorough drainage!

Pathology and Treatment of Anal Fissure.

ROSENBACH. "Zur Pathogenese und Therapie der Sogenannten Fissura Ani." *Berliner Klinische Wochenschrift, 12 Marz, 1900.*

The author claims that clinical experience teaches that anal fissure occurs especially in people in whom there is some obstructive influence acting on the abdominal circulation, and in nervous people, or in those suffering from some chronic irritability of the sexual organs. There develops an abnormal excitability of the bladder and anal sphincters. This condition is aggravated by the carelessness in diet, obstinate constipation and particularly, by the passing of large, hard stools or foreign bodies. Thus there occurs what he calls a vicious circle. The irritation and motor innervation of the sphincters interfering with the normal functions of the rectum and bladder.

Patients suffering from anal fissure complain of difficult and painful stools, and at the same time, as a rule, constipation and dysuria. A careful examination of the parts will find an hypertrophied and strongly contracted sphincter obstructing the passage of fæces and interfering with the venous circulation. The examination of these cases always causes pain. The author thinks that the pathological condition present in these cases is similar to that of nervous cough, nervous belching and vomiting, and nervous dysphonia.

Rosenbach advises a somewhat novel treatment, viz., the introduction into the rectum, first of the surgeon's and later of the patient's finger. This is at first very painful and marked improvement is said to follow in a few days. The finger should be introduced five or six times daily and allowed to remain a few minutes each time, the finger being rotated and the sphincter massaged. Later, a rectal tube, gradually increasing in size, may be substituted for the finger.

Urethral coarctation should receive attention and regular action of the bowels secured by appropriate remedies.

There may be cases where this treatment could and should be attempted, but it seems highly probable, that in these days of safe anæsthesia and asepticism, most Anglo-Saxons will prefer the so-called operative treatment, to one so repulsive and painful.

G. E. A.

Pediatrics.

UNDER THE CHARGE OF A. D. BLACKADER.

Milk Protection.

ERNST WENDE, M.D.—"Report on the Cause and Prevention of Infant Mortality."—*Pediatrics, Vol. IX., Nos. 3, 4* and *5*.

The above report, read before the American Public Health Association in November, 1899, deals with the supervision and protection that should be exercised by municipal and state authorities over the dairy interests and milk business. That the conclusions arrived at are sound is well shown by referring to the vital statistics of the city of Buffalo, where, under Dr. Wende's supervision and by the enforcing of the regulations recommended in the report, a decided decrease occurred in the mortality ratio of those diseases which are frequently milk-borne. Thus in 1890 in a population of 260,000 there occurred 585 deaths from cholera infantum, scarlet fever, diphtheria and typhoid fever; while in 1898, though the population had increased to 370,000, only 450 deaths from these diseases are recorded. As chairman of the committee, Dr. Wende sent a circular letter to the one hundred largest cities of the United States, asking "what supervision and protection are exercised by municipal and state authorties over the dairy interests and milk business in your city?" and received forty-nine replies. Following the headings of the report, the details are here given more or less in full as their importance seems to warrant. In some instances only the conclusions arrived at are presented.

Infantile Mortality.—Milk, both in the nursery and later years, constitutes a large proportion of the food of infants and children, and it is especially liable to become unclean, infected and dangerous. The mortality of children under five anad especially of infants under a year gradually decreases as the quality of the milk improves.

Educating Mothers.—Wherever registration of births is enforced, it is possible to impart information to mothers when it is most needed. Thus, in Buffalo, it is the practice to mail a circular of instruction on the care of infants to every mother at the beginning of the summer months. As a result, while in 1890 out of a total of 5024 deaths in Buffalo, 2305 were under five years of age;" in 1898, notwithstanding the great increase in population noted above, there were only 1570 deaths in children under five years of age out of a total of 4533. The decrease dated from the time the circulars were first distributed, cholera infantum alone showing a decrease of 100 per cent. The report

attributes part of the improvement to an ordinance prohibiting the sale of long-tubed nursing bottles, which has been in force since 1890.

Diseases Conveyed by Milk.—Among the milk-borne diseases are classed, tuberculosis, diphtheria, scarlet and typhoid fevers; and among those which milk is frequently the direct agent in producing, by the generation of toxic bacterial products, are acute diarrhœa, cholera infantum, tyrotoxicon poisoning; while inanition, malnutrition and marasmus result from unwholesome milk supply. The report adds to the list of those already described by various writers and which are referred to, an account of three outbreaks of typhoid fever and two of scarlet fever directly traced to the milk supply. In one of these, 57 children in 26 separate families, supplied by one milkman, developed scarlet fever in quick succession, and investigation proved the presence of two cases of the disease in the milkman's own household. The infection in this instance was further traced back to a dairy farm where a young man of 19, in the desquamation stage of the disease, did the milking, washed the cans, and transported the commodity for shipment to the unsuspecting milkman in the city.

The Tell-Tale Milk Register.—"This invention, which had its birth in the Department of Health of Buffalo, immediately furnishes a ready means for the detection of infection on milk dealer's routes. Appreciating its merits, it is posted daily, and thus the healthfulness of families supplied by each individual dealer is constantly watched. As soon as it appears that on the route of any milk dealer any infectious disease exists, an immediate investigation is made into every detail of his business, source of supply, and the conditions existing there, when, if justification asserts itself, or even a doubt, his route is suspended, until it can be made absolute that his is not the source of danger." The institution of this register followed the occurrence of the outbreak of scarlet fever above referred to, and since then four other epidemics have been at once detected and promptly controlled.

Milk Legislation, and Jurisdiction of Local Authorities.—The necessity of laws giving the health authorities plenary powers in matters of municipal sanitation is strongly urged, and the inadequacy of existing laws in many states pointed out. And even where the local health boards have sufficient powers within their own municipalities, there is the difficulty of exercising supervision over the dairies from which the milk is received and which lie outside the city limits. The plan recommended is as follows :—"No person should be permitted to ship milk into any city without a milk importer's permit, which should only be issued after a careful inspection of the premises and cattle. . . . A written application should be filed with the Board of Health of the city giving a

detailed statement of the location and condition of the premises, barns, stables, etc., etc., and a sworn statement from a legally qualified veterinarian as to the condition of the herds. . . . If the question of authority is raised, it can speedily and effectively be disposed of by interdicting the milk at the city line or at the depot, thus preventing its sale within the confines of the city."

Dairies, Farms, and Cow-Sheds.—Systematic inspection of all dairies and cow-sheds by qualified inspectors is a compulsory part of the proper regulation of the milk supply. For this purpose it is usual to consider all places where milk is sold, either from shops or in distributing vehicles, as dairies, and all places where milk is produced are looked upon as dairy farms. A license is granted only to those whose premises and arrangements for storing milk are found to be in a proper sanitary condition, and it can be revoked at any time if the holder is found to be violating any of the rules drawn up for his guidance.

Tuberculin Test.—The committee, while recognizing that it is as yet unsettled whether milk from tuberculous cows is dangerous when the udders are not affected with the disease, believe it is wiser to refuse to allow the sale of milk from cows the subject of tuberculosis, whether the udders are affected or not. In Buffalo, all producers are obliged to furnish certificates from a properly qualified veterinary surgeon that their herds are free from tuberculosis, as evidenced by a physical examination and the tuberculin test.

City Delivery.—In large cities it is impossible for some dealers to deliver milk to the consumer before it is from 24 to 36 hours old. This adds greatly in the summer time to the danger of contamination, or of changes taking place which render it unfit for use. It is suggested by the Committee that in order to control in some measure the sale of overaged milk, that, during the summer months, "it should be made mandatory that milk cans should be properly labelled at point of shipment, with date, vertified by railroad station agents, and none permitted to be sold over 28 hours old, and then only when protected by refrigeration both in transit and storage."

Glass Jars and Bottles.—The question of delivery from cans or by bottles is an important one. While the system of delivery in glass bottles possesses many advantages, it is pointed out that as the bottles are usually taken into the sick room in cases where milk is the diet prescribed for invalids, the danger of contamination with the germs of disease is very considerable. Then, too, the bottles are so made that the process of sterilization by steam involves considerable loss by breakage; and it is thought unlikely that in view of this fact they are often raised to a sufficient temperature in the cleansing to destroy disease germs. It is also

a common thing to refill bottles on the wagons. In Buffalo, an ordinance prohibits the delivery of milk in bottles to placarded houses.

Skimmed and Separated Milk.—It is held that the sale of skimmed and separated milk should be permitted, as they possess some food value at low cost. Skimmed milk contains a certain percentage of cream, while separated milk is totally deprived of its fats. "Protection from substitution is obtained by only permitting its sale from a different and specially coloured or shaped can, in order that the purchaser may at a glance know the character of the contents."

The question of milk standards and methods of adulteration need not be noticed here, although they are fully considered in the report.

Permits and Licenses.—"The 'License System,' which includes inspection, scrutiny, detection and punishment, is the best yet devised for the purpose. It further simplifies scrutiny and localization from source to consumer, deters from fraud, and detects infection. The attitude towards the milk industry should be both State and Municipal control, operating in harmony under similar principles with an identical object in view, forming a system of protection from dairy to consumer. The State should exercise its control until the milk passes within municipal limits and authority, and should include every feature and detail in its aspects of protective sanitation."

G. G. C.

Reviews and Notices of Books.

SAUNDERS' MEDICAL HAND ATLASES. Atlas and Epitome of Operative Surgery, by DR. OTTO ZUCKERKANDL, Private-Docent in the University of Vienna, Authorize Translation from the German. Edited by J. Chalmers DaCosta, M.D. W. B. Saunders, Philadelphia, 1899. Canadian Agents, J. A. Carveth and Co., Toronto.

There is a small book of less than 400 pages, but it will fill a long felt want. Inquiries are constantly being received from general practitioners and advanced students in medicine for a one volume work of moderate price on operative surgery. This book should admirably fill the demand. It contains 24 coloured plates and 217 illustrations in the text. The illustrations are good and helpful. The text is concise, yet the meaning is clear. There is a lot of information in a small space.

The author devotes a chapter to a description of the different forms of knives and saws required. Another section describes and illustrates the different methods of bringing about reunion of the tissues, including the various forms of suture of wounds, muscles, tendons, nerves, and bones, as well as the suture of the bladder and the intestine.

A very useful chapter is devoted to the ligature of vessels in continuity. The sections dealing with amputations are well illustrated and the descriptive text makes plain all the ordinary amputations, the relation of the important vessels and nerves to the line of incision, as well as the points to be attained and avoided.

The section devoted to the plastic surgery of the face and neck, including harelip operations, is very satisfactory. Abdominal work, including hernia, receives full attention ; but strange to say no reference is made to the operation for the removal of the vermiform appendix.

In its general arrangement the work is regional. The artistic part is well done and the book, we predict, will fill a useful place in surgical literature.

G. E. A.

Society Proceedings.

ONTARIO MEDICAL ASSOCIATION.

The twentieth annual meeting of this Association was held in the Normal School Buildings, Toronto, on Wednesday and Thursday, the 6th and 7th of June, 1900.

The meeting was called to order on the morning of the first day at 10.30 a.m. by Dr. Adam H. Wright, of this city, the first vice-president, who stated that owing to the death of their president since the last meeting, it would be necessary for the Association to elect his successor.

Dr. Wright then vacated the chair, which was voted to Dr. R. A. Pyne, who called for nominations for the position of President.

Dr. Adam H. Wright was unanimously elected President, amidst much enthusiasm, and after expressing his sincere thanks for the honour, called upon the Secretary to read the minutes of the last meeting.

These were unanimously adopted.

The report of the Committee on Papers and Business followed. It was presented by the chairman of that committee, Dr. A. A. Macdonald. —Adopted.

Dr. Allan Baines, the chairman of the Committee of Arrangements, presented a verbal report setting forth the entertainment provided for the members of the Association during the progress of the meeting.

Reading of papers and discussions thereon.

The Use of Morphia in Eclampsia.

Dr. David Hoig, Oshawa, read a paper on this subject, stating that his experience with eclampsia dated almost from his first obstetrical case in practice, and in this he was forced to use morphia from the severity of the convulsions, and with very gratifying results. He recited the history of eight cases, in three of which there was no history of any renal insufficiency. The case of a young woman in the eighth month of pregnancy was cited, in which the bromide and chloral treatment was first tried, but failed. He then used $\frac{1}{4}$ of a grain of morphia, but this also failed. The temperature was 104 and the pulse 150. Delivery was effected. Severe hæmorrhage followed, succeeded by two very severe convulsions, both of which were fully controlled by $\frac{1}{2}$ grain injections of morphia. Dr. Hoig has always made it a practice to examine the urine from time to time, and he has frequently noticed albumen present, and no convulsions. He instanced another case where twins were born,

no doctor being present. Ten minutes thereafter the woman was dead, without convulsions to account for it.

Dr. John Ferguson began the discussion of the paper, and congratulated Dr. Hoig on its practibility. It was now generally recognized that you may have puerperal convulsions even of severe type without the presence of albumen in the urine; and that you may have the occurrence of albumen for the first time known in the history of the patient, in fact, abundance of albumen, without the occurrence of convulsions. You may also have a successful pregnancy in an old albuminuric, in chronic disease of the kidney without convulsions.

Dr. J. L. Bray, Chatham, speaking of the treatment, did not think that morphia alone was sufficient, as his experience with morphia has not been successful. Free elimination and chloroform has done more for him than morphia. He did not think that anyone really knew the cause of these convulsions. Another thing that Dr. Bray had noticed in his experience was that when he had a case of convulsions appearing before labour commenced, the prognosis was generally unfavourable: but when the convulsions came on after delivery, his prognosis has been favourable. He would lay great stress upon free elimination. Give elaterium or croton oil. He further stated that in venesection he had found that often it was not possible to get the blood to flow at all freely. He mentioned one patient who had thirty-three convulsions after delivery and she got well.

Dr. E. Clouse, Toronto, stated that he had recently attended a case of confinement with advanced kidney disease. Saw her first about a month after pregnancy, with swollen limbs and characteristic pasty complexion, and passing large quantities of albumen, about 25 per cent. of the urine. On consultation with two other physicians, she was permitted to proceed to her confinement, and she got along very well, indeed, without any convulsions, and gave birth to a well-developed female child. A point of interest in this case was that about four or five days after the child's birth, there was a discharge from it corresponding with the menstrual discharge.

Dr. K. C. McIlwraith, Toronto, stated he had seen five of these cases during the past year, one case in particular being mentioned where the urine was almost solid with albumen, accompanied by great ascites and anasarca; the labour was good and no convulsions whatever. In another case, the urine had been examined one day and no albumen found, but the next day she had a convulsion, and albumen was found afterwards. Speaking of the treatment, he has found that small doses of morphia had usually no effect, but ½ grain, in his experience, generally had controlled them.

Dr. Barrick took issue with Dr. Bray in regard to unfavourable prognosis where the convulsions came on before delivery. In half-a-

dozen case which he could then call to mind, only one of them died, where the convulsions appeared before delivery. He further stated that those who recovered, had no trouble in succeeding pregnancies. Referring to bleeding, he mentioned a case, where chloroform would not control the convulsions, bleeding was resorted, a half-pint was drawn from the arm, the fits ceased immediately, and did not again occur.

Dr. Harrison, Selkirk, stated he had seen a great many cases of eclampsia, in an experience of fifty years, and his experience is exactly opposite to Dr. Bray's. When convulsions take place before delivery, you can deliver; and the chances were not so good when the convulsions came on after delivery. He has lost patients after and before delivery; but he has always regarded those coming on after delivery as the more dangerous. In properly selected cases, he would bleed.

Dr. Hoig, in reply—He quite agreed with Dr. McIlwraith that there was no use in giving small doses of morphia. He had had no experience in bleeding, but could readily believe that in properly selected cases, it might be of value. He referred to the debilitated state the patient was left in after these attacks, and thought that the long loss of albumen was responsible for many of the sudden deaths that had occurred.

Discussion in Surgery—Appendicitis, its Recognition and Operative interference.

Dr. Luke Teskey opened this discussion. One of the most important conditions in the study of this disease is the recognition of many varieties, or, perhaps better, degrees of inflammation which attack the appendix, and also various conditions which may be left by a severe attack. One may be prepared to find any degree, from the slightest chronic catarrhal appendicular colic, to the most acute and rapid gangrene. He divided this affection into three classes: 1, chronic catarrhal appendicitis; 2, acute circumscribed appendicitis; and 3, the fulminating, or gangrenous appendicitis.

Speaking of the first variety, it is not difficult to recognize, when there are frequent repeated slight attacks of pain in the appendiceal region, coming on after slight exposure to cold, or after slight exertion, or sometimes without any well-defined cause, lasting a few hours or an hour or two, with possibly slight rise of temperature, or no rise of temperature, and the patient able to go on with his work the next day. In many instances, the pain is not referred to the appendix, but frequently to the epigastric region. Other symptoms, symptomatic or general, such, for example, as symptoms of chronic indigestion, in effect, a loss of power in the digestive function throughout the alimentary tract, associated with marked loss of body weight, were very important. These sometimes caused this form of appendicular disease to be mistaken for a chronic tubercular affection of the abdominal viscera, and sometimes for

chronic indigestion. In relating one or two cases before him of recent date, Dr. Teskey stated that in these cases which were often looked upon as chronic indigestion, when an operation was performed for appendicitis, this simple catarrhal condition was found, without any foreign body in the organ, but with enlarged lymphatic glands in the vicinity of the appendix. These attacks never caused the patient to lay up in bed, at most only colicky pain existing only for a few hours. Invariably, the patient had lost, in these cases, in body weight. The symptoms had resembled tuberculosis. In these cases, little or no invasion in the abdominal cavity. After operation in these catarrhal conditions, the recovery of the patient was most complete and perfect, so much so, that within two or three months they gain back their body weight and usual power of digestion and usual health and strength; and that is the essence of the complete proof of the beneficial effects in that particular class of cases. The most reliable means of diagnosis in such cases, is careful palpation of the abdominal wall in the iliac region. In some you may be able to palpate the appendix, but you cannot always feel it, and even when you do feel it or think you feel it, you do not know whether it is the appendix or not.

In reference to the second class,—acute circumscribed appendicitis,—that is, the form of affection in which nature has succeeded in organizing adhesions, sufficient to incarcerate the disease to a limited area. This is perhaps the most frequent form. The attack begins with acute pain, perhaps most frequently epigastric pain; a rise of temperature; furred tongue; indigestion; the abdomen becomes more or less resistent over the right iliac region; and tumescence on palpation, is found on the right side. The symptoms continue, with some tympanites, when on the second or third day, there is distinct tumescence to be felt in the appendicular region, and circumscribed suppuration has taken place. The recognition of this form of the disease depends largely upon the tendency of the symptoms to localize in the right iliac region. This form of appendicitis is not difficult to recognize after it has gone on for a short time. When the disease is low down in the pelvis, however, you may not succeed in discovering it by palpation, and you must then depend largely upon general symptoms. If you cannot find tumescence, you will be able to get a degree of resistance, whether low in the pelvis, or up towards the liver. This degree of resistance together with general symptoms, will lead you to a diagnosis.

The third class of cases,—the acute fulminating or gangrenous appendicitis. Here reference is made to the greatest degree of intensity of inflammation, produced by the greatest degree of infection, which has created the inflammatory act, so that gangrene is invariably formed in some form or another. At times it may not be localized in the appendix but in the adjacent structures. To this class, Dr. Teskey gives the

name,—acute fulminating, or gangrenous appendicitis. Severe symptoms may be expected from the commencement onwards. Here the attack is so intense from the infection, or so virulent, that nature has or makes but an imperfect attempt to circumscribe the abscess. You will have great pain and acute rise of temperature; early tympanites; brown furred tongue; some resistance and rigidity of the abdomen; in fact, symptoms of septicæmia. The characters of this variety of appendicitis, because of the acuteness and the intensity of the symptoms, renders it not so very difficult of diagnosis. Sometimes, the amount of tympanites that exists, causes the physician or the surgeon to overlook the localized condition. The patient almost invariably commences by vomiting, severe vomiting. Because of this, acute gastritis has been diagnosed. Palpation is interfered with from the intense tympanites which come on. Very often the inscription on the death certificate is written,—acute peritonitis. These acute forms can also only be recognized by the general symptoms, possibly by the previous history in connection with some difficulty in that region, and careful palpation before tympanites has come upon the patient. After that has come upon the patient, you are more or less in the dark. Conditions which follow an acute attack : In a large number of instances, the result of an acute attack uninterfered with, is that various sinuses have been formed, imperfectly draining abscesses in the abdominal cavity, to various surfaces, perhaps most frequently to the intestinal surfaces. Discharge of pus through the intestinal tract may go on and recovery result, or a chronic discharge into some of the hollow organs of the body or to the surface of the body may result. When that chronic suppurative condition is imperfectly drained into some of the internal organs, it may become very difficult to diagnose the case in after years. Dr. Teskey here mentioned a case suffering for two years.

Operative treatment.—Taking the first class of cases,—simple appendicular colic,—shall we operate or not? When we have made a diagnosis, Dr. Teskey has no hesitation in pronouncing in favour of operation in all such cases. His reason is this, that the death rate should be nothing. The recoveries should be 100 per cent. A limited incision is all that is essential,—an inch to an inch and a-half at the very outside. There should be no death rate from that operation; and you have relieved the patient from a constantly occurring painful condition. This simple form of appendicitis in many instances leads onwards to the more severe forms.

As to the second class of cases, shall we operate, and when shall we operate ? This is the one in which discussion has been rampant. Calomel and opium have been used a multitude of times; and there is no doubt of the possibility of the patient getting well. The physician says, we will not submit the patient to the operation, but we will trust to the

process of nature, assisted by the specific remedies. That is the wrong practice. The physician who has taken that ground has taken a mistaken ground. In all instances he has jeopardized the life of his patient. If he can diagnose the condition within twenty-four hours, carefully feeling for the resistance, which one always finds in localized inflammatory conditions,—it may not be easy to find it at first, but practice will soon get one to recognize the resistance which is not usual, and which indicates appendicitis,—and as soon as he gets this located, and appendicitis exists, that is the moment for operation, and in all instances you should operate. If you do not operate and wait until abscess has formed, you can open the abscess, and the patient recovers. Very true. But what follows? The patient has absorbed a large amount of septic material into his system. Already there may be an abscess in the liver. Abscesses may be set going almost in any part of the body, and then there is a localized abscess, and the intestines and omentum are entangled, and serious chronic trouble apt to follow, for many years in most instances. But if you operate immediately before all that, you have saved the patient and you have run no greater risk so far as the preservation of the patient's life is concerned.

And third, in the acute fulminating or gangrenous appendicitis, the only hope for life is an early operation.

Dr. George Bingham—Dr. Teskey's views in reference to the treatment and diagnosis of this subject correspond so closely with his, that he has scarcely anything to add thereto. In reference to classification of this disease into forms, there was a difficulty, for the simple reason that unfortunately any given case, may be in class one to-day and in class two to-morrow. He was pleased to hear from Dr. Teskey that he does not claim to palpate the normal appendix. He referred to the vomiting, which he thought occurred almost invariably. Examination per rectum had also been of use to him in the diagnosis. He dwelt on the importance of the interval operation considering it to be the ideal operation, and thought that the fatality here should be *nil*. In the case of the circumscribed variety, he was exceedingly glad to hear that Dr. Teskey approved of an early operation.

Dr. H. A. Bruce—He agreed in the main with the observations of Dr. Bingham and with those of Dr. Teskey. He took a little exception to the classification. In the second class he would put the simple acute, and then under the heading of acute appendicitis, the particular variety which may be present in the case you may be dealing with, the name of perforative. He did not think we could say positively, before opening the abdomen, whether the appendix is in a gangrenous condition or not. Dr. Bruce made further reference to the diagnosis, particularly dwelling on that between appendicitis and tubercular disease of the same region.

Dr. George Peters—The creed set forth seems to be, appendicitis,—operation. He could not quite agree to that. He thought most of the members present had seen cases of appendicitis get well and the patient remain healthy; perhaps only have a single attack. He thought all had even seen cases of more than one attack with recovery. Nor could he go so far as to say that every case of operation for appendicitis in the catarrhal stage would be followed by recovery, because one cannot always tell what condition the patient is in constitutionally as regards diabetes, Bright's, etc. Reference was made to the length of the incision advised by Dr. Teskey, and Dr. Peters thought there were many cases in which you cannot remove the appendix through an incision an inch and a-half long, as, for instance, in a patient with much adipose tissue in this abdominal wall. In regard to the diagnosis, he thought in the great majority of cases it was an easy matter, but whilst a good many cases escaped diagnosis, there were also a good many cases diagnosed as appendicitis that were not appendicitis at all. He did not believe you could feel the normal appendix, except in a very few cases, and then how can you tell that you are not feeling a fold of the intestine. If, however, it is diseased and thickened, you can feel it in a thin abdominal wall.

Dr. Wm. Oldright—With regard to operation or no operation, he was very strongly of the opinion that if a person has had a second attack of appendicitis, we should operate. With regard to the cases operated on between the attacks, the statistics are 98 per cent. of recoveries; and although we cannot say positively that the patient will recover, the mortality may be put down at *nil.* Dr. Bruce had referred to finding grape-seed bodies in the appendix. This reference he considered unfortunate. He had never seen grape seeds in the appendix, and thought their occurrence there were very rare.

Dr. N. A. Powell spoke in regard to symptoms. In regard to the location of the pain, he thought not occasionally, but uniformly, the pain is referred to the epigastric region; then it becomes umbilical, and then reaches the appendiceal region. He was glad that the point had been brought out, a medical point of great importance—that intestinal indigestion is antecedent to the attacks of appendicitis; not gastric, but intestinal. Then one should not pin his faith too much upon a single symptom. He considered that nausea always and vomiting usually were present. Another symptom he would lay stress upon, was that of rigidity of the right rectus. Dr. Powell thinks it useful to divide the attacks into periods of the first twenty-four hours, etc. If you get over three complete days, and if the case is not getting along well, you are likely to have to deal with pus. One and ½ inch incision is too short in fat people. He further stated that Dr. Osler says there is no medical treatment of appendicitis.

Dr. Watson, Agincourt, spoke of the diagnosis and recited his experience with appendicitis. He thought it important to watch the breathing and the pulse. Examination per rectum, he had always found of benefit. Referring to the question of grape seeds, in one of these cases an enema had brought away a large fæcal mass in which was embedded between forty and fifty of these bodies, but of course he could not say that any of them had been lodged in the appendix.

Dr. Parfitt, Toronto, referred to the differential diagnosis of what might be called typhoid appendicitis, appendicitis and gall-stone colic, and the importance of examining the blood in appendicitis, to ascertain the number of leucocytes.

Dr. A. A. Macdonald thought that by and by we would come to have the courage to operate at once on every case of appendicitis; he looked forward to the time when the physician would say to his patient, you must be operated on now within twelve hours.

Dr. John Ferguson—If the case is a very mild one, and doubtful if it is appendicitis, but some distress in that vicinity, and the patient well and about his business in two or three days, he would not counsel operation in that case. He would advise the patient to keep himself under his physician's watch and care, and should there be a return of symptoms, he would then adivse operation at once.

Dr. Teskey, in reply—With regard to waiting for the interval, if you are called so late to a case that it is already resolving, and the symptoms are abating, of course wait for the interval. Dr. Bruce thought perforation should be included in one class as a variety. Perforation is always associated in the second class when it goes on to extensive abscess. He never removes a gangrenous appendix. He considers it a dangerous process to interfere with imperfect adhesions which nature seeks to form as a limitation to the process. Palpation in the rectum he has found of very little value. It may be of value where you find a chronic abscess low down in the pelvis. Early operation was considered justifiable because it would lessen the death rate,—and that was everything; lessen the death rate.

Adjournment.

Afternoon Session.

President's Address.

At the opening of the general session on the afternoon of the first day, Dr. Wright delivered a very interesting and able address upon "The General Public and the Medical Profession," which was very cordially received by the members of the Association present. He referred to the progress of the profession and the stand it held in the community at the present day. The opinions of Mr. Gladstone and the Marquis of Salisbury were given, both of whom were on record as having said very flattering

things of the profession of medicine. Jealousies in the profession came in for his condemnation, and he thought it would be particularly happy for all if this was kept out of the profession as much as possible. The importance of attending the annual meetings of the Association was dwelt upon and emphasized, and a feeling reference was made to the death of the founder and recent president of the Association, Dr. J. E. Graham.

Dr. Wright was accorded a hearty and unanimous vote of thanks for his unusually interesting address, to which he replied appropriately.

Discussion in Medicino—The Future of Therapy.

Dr. Lewellys F. Barker contributed an erudite paper on this subject, which was easily seen to be written in choice and elegant diction. He was thankful to have the opportunity and pleasure to return to Toronto after an absence of eleven years, and to be accorded the honour of reading the Address in Medicine before the Ontario Medical Association. Although the title of his paper would lead one to expect considerable information about what the future held in store for therapy, it proved more to be a masterly review of historical character down the long line of the centuries. The history of therapy was intimately linked with that of medicine, and the past was rapidly reviewed until scientifics study in the use of the microscope in histology, pathology and bacteriology was reached. The essayist dwelt upon organo-therapy, serum-therapy, climato-therapy, and all and everything that one could bring to bear upon the treatment of disease. The stupendous advances being made in scientific medicine, and the vast amount of experimental and research work going on throughout the world now rendered it essentially necessary to emphasize the importance of a division of labour in the profession of medicine as well as in other walks of life. Dr. Barker was accorded a very flattering vote of thanks on the conclusion of his exceedingly able review.

Dr. McPhedran congratulated Dr. Barker upon his unusually able paper. It was, he said, exceptionally brilliant. It was very gratifying to have one of our own students come home and contribute such a paper. He thought that the therapist of the future would be the man skilled in science, in all its bearings. He contrasted the position of internal therapists with the surgeons, and thought that the former were far behind the latter, although the surgeons must not forget that it was by the influence of therapy that made it possible for them to reach such a state of preferment.

Dr. J. L. Davison considered the paper of Dr. Barker a mass of erudition, but would have liked had he referred to the action of drugs. Whilst we had been brought up on drugs and fed on drugs, it was difficult to understand how the belief in drugs was going to pass away. He further

referred to the action which one disease has in curing another, and thought this feature together with how drugs acted was still a very interesting side of the question. Referring to the question, what is disease, he stated disease to be a condition of unstable equilibrium, while health was a condition of stable equilibrium. Electro., hydro., and other therapies were also alluded to.

Interprovincial Medical Registration.

Dr. J. A. Williams, Ingersoll, introduced this subject in a clever address. He detailed the history of the agitation for the reform of our laws so as to permit of legislation for this purpose, and then proceeded to deal with the details of the proposed bill now before the profession throughout the Dominion of Canada, and which Dr. Roddick, M.P., purposes introducing at the next meeting of the House of Commons.

Dr. Thorburn, in a brief speech, said that the proposal had his heartiest endorsation.

Dr. Britton thought the proposed bill as a whole a good one. He took exception to the appointment of one member of the Dominion Council by the Governor-General-in-Council. He thought that feature objectionable, as it might tend to make the body partly at least political.

Dr. Herod, Kingston, spoke at some length, in the main concurring in the proposals as set forth in the Draft Bill.

Dr. Roddick, M.P., went into the subject exhaustively, and asked for the unanimous support of the Ontario Medical Association, as he believed that with the influence of such an important body behind him that it would go far towards bringing the matter to a successful issue. His burden was to get the legislation passed through Parliament now; any minor details could be arranged afterwards. The provisions of the bill are now so well known that any synopsis would be superfluous, although Dr. Roddick explained it very clearly to the meeting.

Dr. Williams made a brief reply.

Adjournment.

Evening Session.

The evening session was held at McConkey's, where one of the most enjoyable—if not the most enjoyable—banquet in the profession here was held. Dr. Allan Baines, chairman of the Committee of Arrangements, was indefatigable in his efforts to make this function a pronounced success, and he must have slept happy and contented that night, because his efforts were crowned with supreme success. Dr. Wright presided. The usual toasts were drunk, and the following gentlemen made speeches : Drs. Sheard, Williams, Bray, Burt, Barrick, O'Reilly, Harrison, Bruce Smith. Songs and music and an exceptionally fine and dainty menu were thoroughly enjoyed.

SECOND DAY—MORNING SESSION.

Acute Suppuration of Mastoid Cells—Chronic Suppuration of Maxillary Antrum and Anterior Ethmoidal Cells of 30 Years' Duration.

DR. P. G. GOLDSMITH, Belleville, read notes of these cases, and presented the patient in the latter case. The first three cases which came under his notice during the past year were noted. The first was a man fifty years, who during a bad cold felt something snap on blowing his nose. Immediate pain in the ear followed. On examination, perforation was found in the membrane, but in spite of proper treatment, the mastoid became involved, and he was referred to Dr. James MacCallum, Toronto, who concurred in the diagnosis and agreed that operative procedures were advisable. This was done, and the discharge stopped at once, and the patient made a good recovery. In the second case the patient died, but on post-mortem examination, the brain was not found involved.

In the third case, recovery was noted.

This case of chronic suppuration of the antrum of Highmore occurred in a man aged 38 years. It began at the age of eight, after a severe attack of neuralgia of the face by a yellowish discharge from the right nostril which has persisted ever since. The anterior ethmoidal cells were scraped with a great deal of relief to the patient. Then the antrum was drained in the usual way. Complete relief was noted for a few weeks, but the discharge returned, and Dr. Goldsmith now purposes to curette the cavity.

DRS. L. L. PALMER and PRICE BROWN discussed these cases.

The Committee on Credentials here brought in their report which was adopted. The following were elected members of the Association :—C. J. Copp, Toronto; R. K. Anderson, Milton; W. D. Scott, Rocklyn; G. W. Clendennan, W. T. Junction; Murray McFarlane, Toronto; W. Thompson, Toronto; John D. McNaughton, Glenallen; L. G. McKibben, Toronto; W. C. Herriman, Hamilton; C. Lang, Owen Sound; C. S. McKee, Toronto; A. H. Perfect, Toronto Junction; C. D. Parfitt, Toronto; P. McG. Brown, Camlachie; J. D. Berry, Hastings; A. Carmichael, Sundridge, and F. W. Young, Michipicoten Harbour.

Exploratory Incision in Obscure Brain Lesions—Some Points in the Treatment of Meningocele.

DR. L. W. COCKBURN, Hamilton, reported two cases of obscure brain symptoms without any definite diagnosis, both occurring in young men. In the first, no treatment being of any avail, an exploratory incision was advised and accepted. The dura and brain were both found healthy; the patient recovered completely from his symptoms thereafter. He

considered this case as well as the second recorded to be one of cerebral neurasthenia. In the second case there was the history of a head injury in early life. Incision was also advised here but up to present time has not been accepted.

His remarks on menigocele referred to an operation on a child with resultant death thirteen days after the operation. He thought operation the proper method of treatment in these cases, and condemned the injection of any fluid such as Morton's.

Dr. J. T. Duncan, Toronto; Dr. McKinnon, Guelph; Dr. Peters, Dr. Ferguson and Dr. Lett, spoke to this paper.

Removal of Tubercular Testicles, Vas Deferens and Vesiculæ Seminales, at One Sitting.

Dr. George A. Peters reported this case, exhibited the pathological specimen, described the difficulties of the operation and the final results.

Total Removal of Vas Deferens and Vesiculæ for Tuberculosis.

Dr. J. Alexander Hutchison, Montreal, by invitation presented this paper. It reported the excision of the right organ for secondary tubercular affection. It may be primary or secondary, but usually the latter. The first operation of this sort was done in 1890; and the first excision on this continent was performed by Weir, of New York, in 1895. The essayist described three chief methods. The method which he had adopted and which he would recommend was that of Roux of Rosanne, the perineal route. The subject upon whom he had operated was a young man of 28 years, with a sinus in the right scrotum. It transpired that he had been operated on for left testicular trouble with recovery. Recovery was noted and the patient had returned to England in good health to resume his work.

Dr. Cockburn, Hamilton, and Dr. E. E. King, discussed these two papers and their respective cases.

Dr. Hutchison closed the discussion.

A cordial vote of thanks was voted to Dr. Hutchison for his contribution to the meeting. This he acknowledged suitably.

Transplantation of Ureters into Rectum by Extra-Peritoneal Method—Furthor Report of Case with Exhibition of Patient.

Dr. Peters refers to reports of Canadian Medical Association, 1899, for notes of this case. The boy is now six years of age, and is in a good healthy condition, able to play and run about with his playmates. He is able to go for eight hours through the night without soiling the bed, if he does not drink very much before he goes to bed. He retains it for two or three hours during the day. So far there has been no ascending

infective trouble in the kidneys. The operation was performed extra-peritoneally, and for this Dr. Peters claims priority and originality.

Dr. W. Britton and Mr. Cameron discussed the case and congratulated Dr. Peters upon the results he had achieved.

Army Medical Arrangement for the War in South Africa.

Dr. J. T. Fotheringham, by means of interesting charts was able to deliver an admirably instructing address upon this now very lively topic. The Medical Service was exhaustively gone into and carefully and lucidly explained from the time the soldier was wounded in battle until he rested quietly and peacefully on board a hospital ship, the hospital at the base, or was invalided home.

Dr. Nattress followed confining his remarks to first aids on the field of battle.

Dr. F. LeM. Grasett gave a highly interesting account of the bullet wounds and what knowledge had been obtained in regard to this matter from South African experiences. He deplored the fact that Canadian surgeons had not been given a fair chance to participate as consulting surgeons, although this Dominion had supplied a very acceptable quota to the "sinews of war."

Dr. Peters also participated in the discussion.

Cancer of the Rectum—Illustrated by Lantern Slides.

Dr. E. E. King gave an admirable exhibition on this subject. He presented two patients for examination by the members of the Association, described his cases fully and concluded with statistics on the subject. Reports of these cases have already been published in the Toronto journals.

Observations upon Blood Pressure.

Dr. R. D. Rudolf, Toronto, contributed one of the features of the meeting. By means of the lantern, slides were exhibited, showing blood pressure in dogs under different conditions, together with the effects of drugs as chloroform, atropine, etc., upon the circulation and respiration. An interesting canvas picture was that referring to the new drug chloretone. The animal received a dose of .275 per kilo. of the body weight and ten minutes after the administration of the drug, the animal was in the condition of anæsthesia, with regular pulse and regular respiration. Another chart showed the animal some hours later. That animal never recovered; and in the act of dying the respirations became lowered; the pulse has gone on very small; and the point was indicated on the chart showing where the animal died. The temperature fall was marked; the lowest was 83.4 F.

The Adaptation of Patient to Climate in Cases of Phthisis.

Dr. N. A. Powell addressed the meeting on this subject. He considered mistakes are being constantly made although we are all honestly seeking aid for guiding principles in this matter. In trying to adapt the patient who is stricken with pulmonary tuberculosis or who shows a tendency towards that disease, we have to consider first the patient, then the form of the infection, and then the climates available. We have also and very seriously to consider the financial condition of the patient. We are satisfied that the very best results accrue from climatic treatment. Take these patients away from dust-laden and moisture-laden localities; put them upon dry soil, and keep them in the open air, and we will get for them prolonged and useful lives. The early cases promptly removed and systematically treated, give a very large proportion—extending up to 90 per cent. of recoveries. It is best to do this in the pre-tubercular stage, where we are not able to say by the physical examination that the lung is involved at all. There are certain clinical varieties which we meet with. First: The acute inflammatory type with high temperature and invasion of the lung tissue; they do badly anywhere. Then there are the class as characterized by early hæmorrhages. Of these, cases were instanced from his own practice. The cases of early hæmorrhage sent to moderate elevations, are ones which give us excellent results. Reports with regard to them from Colorado are not as encouraging as those which come from more moderate elevations. 1,500 to 3,000 feet seems to be much better in the hæmorrhagic class. Then we have the class of cases where the pleura is the point first involved; these do excellently in Muskoka. Speaking of the laryngeal cases, Dr. Powell did not think it advisable to send patients affected with this form of tuberculosis away from skilled laryngologists. We should never be content in sending a patient to a good locality, but we should send him to a good man in a good locality. If there is a sanitorium there, he considers it advisable to make use of it. As to cases of fibroid phthisis, in our Rocky Mountain region and in our Muskoka region, we have places that will benefit them materially. He instanced cases now under his care, that have made the best gain during the winter months. They will gain more in January, February and March, than in any other three months of the year.

As to climate, we have practically only four varieties: the cool-moist and the cool-dry; the warm-moist and the warm-dry. Long ago we sent patients to Florida. They enjoyed it while there, but they came home and they died very speedily. There is a universal repugnance in the profession to-day towards sending patients to a moist-warm climate. As regards the cool-moist climate, on the Atlantic sea-board, in the Lake

Ontario and the Lake Huron areas, we find that as we pass inland from these, that the cases of tuberculosis diminish. If we can take our patients to places of moderate elevations between 700 and 3,000 feet, take them into localities where we can have nearly or quite 300 days of bright sunshine in the year, and where the rainfall is limited, and where the climatic changes are comparatively limited, we shall find ideal localities. In the mountain slopes of our North West and in our northern regions, we have an ideal climate. Dr. Powell concluded his address by emphasizing the necessity of placing these patients when they are sent away from home, under the supervision of competent, skilful and reliable physicians.

The Relation of the Profession to Sanitoria for Consumptives.

Dr. P. H. Bryce in presenting this paper, dealt with the recent legislation passed by the local legislature in regard to sanitoria for consumptives, the work which is now being done throughout Ontario in regard to the prevention and treatment of this malady ; and proposed to move a resolution at another stage of the proceedings in regard to the formation of a provincial association for the prevention and treatment of tuberculosis.

Dr. John Ferguson, Dr. Wm. Oldright, Dr. Playter, Dr. Carveth and Dr. N. A. Powell spoke to this paper.

The meeting were divided into sections.

Surgical Section.

Extensive Necrosis of the Skull.

Dr. William Oldright presented the patient and photographs of the condition at different stages. A man aged 58 years, formerly syphilized, in whom the first appearance of the trouble was brought on about a year ago, after a slight injury, was exhibited to the members. The extent of the necrosis was a patch of four inches square, more or less. The dura could be seen in the opening.

Two Forms of Puerperal Infection.

Dr. K. C. McIlwraith, Toronto, described two cases of puerperal infection in both of which a large piece of placenta had been left behind in the uterus. The lochia was collected by means of Doderlein's tubes, and cultures made therefrom. The importance of this procedure, was that the physician would know whether he was dealing with infection of a mild or more serious character.

Dr. Amyot, Kitchen (St. George), McNaughton (Glenallen), Machell and MacKinnon discussed the subject after which Dr. McIlwraith replied.

The Removal of Septal Spurs—A Note Upon the Use of Carmalt-Jones' Spokeshave.

Dr. D. J. Gibb-Wishart spoke of the advantages of this instrument in the removal of spurs of the septum, pure and simple, exhibited the instrument and described its use.

Dr. Price Brown hardly endorsed its use.

Intussusception in Children.

Dr. Primrose thought this was the most general cause of intestinal obstruction in children. He also referred to tumours as a cause of the condition. The symptoms were carefully gone over ; and cases reported in which he had operated for the condition. He thought the trouble was much commoner in infants than was generally diagnosed.

Dr. McKeown spoke in regard to the medical treatment.

Drs. Bruce, Macdonald and Howitt discussed the paper and the cases, the latter gentleman referring to eight cases already reported in the literature, which he had had in practice, the children being all under one year, recovery noted in seven, and the chief symptoms dwelt upon. He was of the opinion that this occurred far oftener than was supposed.

"The Treatment of Squint from the Standpoint of the Family Physician and Nasal and Post-Nasal Synechiæ," by Drs. J. T. Duncan and Price Brown respectively, were taken as read.

Dr. Henry Howitt presided over this section.

Medical Section.

Dr. Lett, Guelph, was elected to the chair.

The Aetiology of Acute Rheumatism.

Dr. H. B. Anderson contributed a paper on this subject. He said that chemical and nervous theories that had been advanced to explain this disease had not received confirmation from subsequent research, and offered no sufficient nor satisfactory solution of its causation. Among those most competent to speak on the subject, practically all were agreed that it was of microbic origin. The curves formed by the statistics and the mortality of the disease, its occasional epidemic occurrence, the transmission of the disease from mother to child in utero, the clinical course of the disease, and its affiliation to the joint inflammation, at times complicating gonorrhœa, septicæmia, pyæmia, pneumonia, etc., as pointed out by different observers, were all confirmatory of this view. The pyogenic organisms had frequently been found associated with the lesions of rheumatism post mortem, but these were probably merely secondary. Of all the organisms which have been described as the cause of the disease, he thought the bacillus described by Achalme in 1891, was the only one which had stood the test of subsequent research and he

thought that Acholme's work was deserving of more consideration than it had received in England and America. This is a large organism, strictly anærobic, resembling the bacillus of anthrax, growing in ordinary media and easily stained by the aniline dyes. It was often associated with the pyogenic staphylococci and streptococci, though frequently found in pure culture in cases of acute rheumatism.

Dr. Anderson reported a case of acute rheumatism in which death occurred during the first week. At the autopsy, four hours post mortem, an acute endocarditis, pericarditis and double pleurisy was found. Both ærobic and anærobic cultures were made from the various organs. In the ærobic cultures from the pleuræ pericardium, endocardium, liver, spleen and kidneys, the staphylococcus pyogenes aureus and albus were found. In the anærobic cultures, from the pleura, pericardium and endocardium, a large bacillus, corresponding in every way to Achalame's bacillus was found, associated with the pyogenic organisms. A culture from the throat three days before death showed the staphylococcus aureus. Dr. Anderson showed microscopic specimens of this organism. The reason why the organism was not more frequently found was probably that death seldom occurred early in acute rheumatism. The organism was a strict anærobic and so did not grow in cultures as ordinarily made, and it was frequently associated with the pus organisms, so that it was very difficult to separate it out in pure culture.

It had been suggested that Achalme's bacillus was the same as the B. ærogenes capsulatus described by Welch, but it gave rise to no gas formation either in culture media or on inoculation and was otherwise quite distinct. He thought the subject was one worthy of very careful consideration.

In discussing, Dr. Anderson's paper, Dr. Bryce asked if the presence or excess of uric acid has had any effect in the growth.

Dr. Cassidy asked if the bacterium is hard to obtain. Dr. Anderson's statements were of great value. In reading, he had seen the statement that acute rheumatism may proceed from several causes : first heredity; second, chemical lactic acid; third, uric acid; fourth, all three previous. How does lactic acid play a part? By supplying an acid medium for the microrganisms.

Dr. H. H. Oldright reported two cases, dwelling in the eyeball, one a case of adhesions, and asked if this location would bear out the germ theory.

Dr. Lett asked if you can recover the organisms before or earlier in the case.

Dr. Anderson, in reply, stated that the growth was better in the urine of arthritics. Anærobic cultures were not made as a rule; hence probably the bacillus would not have been found. This case died so

soon after coming in that it was a good subject for examination. It has been found in the blood by Acholme.

Differential Diagnosis Between Pneumonia and Pleurisy with Effusion.

Dr. H. H. Oldright presented a paper on this subject.

Dr. H. C. Parsons asked for physical signs and characters of expectoration in one case reported.

Dr. Rudolf—Reuse of the needle; there was no risk in an adult with carefully-sterilized needle.

Dr. Lindsay, Guelph, reported a case with a mishap. The needle failed for a number of times to reach the abscess, but finally found deeply in the lung. Removed portions of two ribs and evacuated. Absorption was increased and the man went down rapidly.

Reply—Foul smelling ; chest was completely dull. Needle : pus organisms might be carried into the lung tissue.

An Unusal Case of Crossed Paralysis.

Dr. D. Campbell Meyers read a paper on this case. It occurred in a man aged 66 years, who has one child, a daughter, who enjoys good health. Last September the case came under his care with left facial paralysis and a history of a recent paralysis of the right arm. The family history of the patient was good. Previous history unimportant. The eyes are good and there is no paralysis of the tongue. Mr. Meyers considered that there were two lesions present in the case, one cortical, and the other peripheral. Under treatment, the patient was fully recovered in five weeks.

Dr. Ferguson asked as to lesions.

Dr. Meyers—There were none except some feelings of numbness.

Dr. Cassidy spoke of a case of facial paralysis in a young man, with recovery in ten days.

Dr. Ferguson spoke of the double lesion in Dr. Meyers' case. He thought the facial lesion was peripheral; the arm lesion was evidently cortical. He thought there may be vaso-motor changes sudden in onset, and the production of paralysis may be only temporary.

Dr. Meyers replied. He thought Dr. Ferguson's vaso-motor theories quite possible, but difficult to prove. Thought Dr. Cassidy's case a simple slight neuritis.

Erythema Bullosum.

Dr. Graham Chambers contributed this paper. He defined this condition to be that form of erythema multiforme which exhibits in the highest degree the pathological change which is present in the latter disease. He looks upon the hyperæmic spot, papule, tubercle, œdematous nodule, vesicle and bulla, as lesions representing different degrees

of the same pathological process. The forms of lesions are all inflammatory in origin, but there is always present, in addition, more or less angio-neurotic œdema. Four cases were reported in all.

Dr. W. J. Wilson spoke of diagnosis between erythæma bullosum and pemphigus. The latter sometimes follows vaccination, as it did in two of the cases reported by Dr. Chambers.

Dr. Bryce spoke regarding the confusing preliminary marks of smallpox, so important to recognize at present.

Dr. Chambers, in reply—The classification of bullous eruptions is unsatisfactory. It is sometimes very difficult to defferentiate them. Pemphigus is usually chronic; erythema bullosum, usually acute. Symmetry of lesions, multiformity of lesions. Thinks Dr. Wilson's point well taken.

Beds, their Proper Construction and Care from the Doctor's Standpoint.

Dr. Carveth read a paper with this title.

The paper was discussed by Drs. Machell, Anderson, W. J. Wilson, Chambers and Bryce.

The Artificial Feeding of Infants.

Dr. C. Sears McKee, Toronto, read a paper on this subject. He thought this subject was not given enough attention by the medical man as a rule. Cow's milk, and that alone, modified, should be the only food in artificial feeding up to nine months. The various foods on the market were dealt with, and the modification of cow's milk given.

Dr. Machell agreed with Dr. McKee regarding milk for children,—not patent foods. He gave a scheme for working out the proportions.

Evening Session—General Business.

Dr. A. A. Macdonald in the chair.

Report of Nominating Committee.—This was read by Dr. Macdonald, which was adopted :—

President—Dr. A. McKinnon, Guelph.
First Vice-President—Dr. R. A. Pyne, Toronto.
Second Vice-President—Dr. W. H. Jeffs, Havelock.
Third Vice-President—Dr. A. S. Fraser, Sarnia.
Fourth Vice-President—Dr. H. H. Sinclair, Walkerton.
General Secretary—Harold C. Parsons, Toronto.
Assistant Secretary—George Elliott, Toronto.
Treasurer—George H. Carveth, Toronto.
Next place of meeting—Toronto.

Report of Committee on Public Health.—This was read by Dr. Gilbert Gordon, and adopted.

Under the heading of receiving the report of the Publication Com-

mittee, a discussion took place upon the desirability of having the proceedings printed in full. The matter was referred to the Publication Committee and the Committee on Papers and Business to report at the first day's meeting next year.

The Special Committee on Inter-Provincial Registration not reporting, under this heading, a unanimous resolution was passed approving of the proposed bill of Dr. Roddick.

The Ontario Medical Library was voted $75.

Dr. W. J. Wilson read the report of the Committee on Hospital Abuse, which was adopted.

The General Secretary's report and the Treasurer's reports were here presented, received and adopted.

The Treasurer's report showed cash on hand of $48.30.

Dr. Bryce read a resolution favoring the formation of a Provincial Association for the Prevention and Treatment of Tuberculosis, which was assented to by the Association.

Necrology Report was read by Dr. Cassidy in the absence of the Chairman, Dr. J. L. Bray. It included Drs. J. E. Graham, James B. Campbell (London), Samuel Hagel (Toronto), Joseph Allen (Osgoode Station), and Dr. Corbett (Orillia).

A vote of thanks was unanimously passed to the Hon. the Minister of Education for the use of the Auditorium.

Another vote of thanks was unanimously passed to Dr. Adam Wright for the efficient manner in which he had conducted the meeting; to this Dr. Wright made a suitable and appropriate reply.

The usual *honararia* were ordered to be paid the secretaries.

Dr. Wright then installed President-elect Dr. McKinnon in office. Dr. McKinnon accorded gracious thanks for the honour which had come to him unexpected and unsought.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK,
A. D. BLACKADER,
GEO. E. ARMSTRONG,
WILLIAM GARDNER,
F. G. FINLEY,
JAMES STEWART,
J. GEORGE ADAMI,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,

WITH THE COLLABORATION OF

WYATT JOHNSTON.
C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW,
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE
H. S. BIRKETT,
J. C. WEBSTER,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS.

VOL. XXIX JUNE, 1900. NO. 6.

THE MONTREAL BOARD OF HEALTH AND ITS DUTIES.

We would call the attention not only of Montrealers but of those of other cities to the admirable address by Alderman Ames, which we print in this number. The duties and scope of Boards of Health are practically the same in all cities, and with regret we have to add the hindrances to the proper carrying out of those duties are of the same order in every large city upon the continent. It is only that we, in Montreal, are in a worse plight than the majority. Taking every circumstance into consideration, it is not surprising that the number of medical men, either upon city councils or members of civic boards of health, is very small. And yet of all classes of the community, physicians have the keenest, the most practical and most constant interest in all that relates to the health of the people. Hence this able address of the recently appointed Chairman of our Montreal Board of Health should interest all our readers, both on account of the clear and comprehensive review it affords of the subjects dealt with by such health boards, and as indicating the difficulties confronting those aldermen and citizens who would seek to have civic hygiene and the by-laws relating to public health rightly administered. Alderman Ames deals with matters which should be familiarly known to all citizens who realize the responsibility of citizen-

ship, which should especially be grasped by medical men, for it is the members of our profession who have guided and must continue to guide the committees to which we belong in the development of a higher standard of public health.

If we, in Montreal, are very far behind in these matters we must not despair, it may be a labour of Hercules to cleanse the Augean stable, it may be years before we can recover from the effects of the civic maladministration of these latter years, but recover we can and must, and it behoves us of the medical profession to whom laymen look for advice not to be passive, but in season and out of season, in public and in private to support and strengthen those who with Alderman Ames are striving to obtain a better administration in this and other cities. It is not that laws and charters are wanting, that the civic regulations are imperfect. That is not the case. It is that the administration of the same is defective. If, as Sir William Hingston pointed out in the discussion which followed this address, the community as a whole is to blame for this state of affairs, if public opinion is weak and the citizens are themselves to blame for electing as aldermen men who continue to abuse the trust confided to them, then we practitioners are even more blameworthy for not having used our influence in the community to arrest the abuse of our by-laws bearing upon public health.

Despite the prevailing laxity—to use the mildest expression—of municipal bodies upon this continent, from north to south, from east to west, we have to admit that most other cities of importance have awakened to the necessity of having a strong and active Health Department, and that during the last decade some at least have made marvellous strides forward. Alderman Ames indicates with no uncertain hand what is the main cause of our backwardness. It is during this last decade that civic mismanagement, the misuse of public funds and of aldermanic powers has been so extreme in our city, that with curiously little to show for the expenditure our debt has increased from thirteen to twenty-six million, and though now citizens contribute eight hundred thousand more than they did ten years ago, there is with an increase of 30 per cent. in population, but one hundred and sixty-five thousand dollars more which can be utilized for current administrative expenses.

With aldermen of the baser sort the Health Department—and the extension of the duties of the same—has never been popular. Properly conducted, the various sections demand skilled, if not expert staffs—demand a class of officials not obtainable under the patronage system—even under the most favorable conditions, when aldermanic nominees fill all available posts, there are few important contracts capable of manipulation ; in short, if scavenging and incineration be left out of account, there is little in the Health Department to make it popular with the

aldermen above indicated, and as a consequence it has led a half-starved existence.

Now, when the new Board would inaugurate a new era, it finds its hands tied; so little money is available for all purposes of city government, that no improvement involving additional expenditure can be undertaken or thought of for five or six years to come. Urgent as is the need of improvement in many directions, progress must, of necessity, be very slow. The new Board is, however, starting well, and herein we see the sound common sense of the new Board. The improvements now outlined, while genuine advances upon the old order of affairs, and while tending to add materially to the health of the city entail a minimum extra cost. The expense of doing away with the abundant privy pits should fall largely upon the owners of property which is second class in everything save the return it makes to its owners; capable inspectors and sanitary officials can replace incapable without extra cost, and it is even suggested that if the Protestant section of our community desire a separate infectious hospital with separate administration—and remembering the different modes of life of our English and French-speaking citizens, differences descending down to the smallest particulars, we cannot but think this separation necessary—the corporation will be willing to grant the site provided the English-speaking section builds and administers it itself. Let it not be thought that this last sentence is written ironically: The present civic hospital is allowed so little for administration, and is so tumble down that for months the plan of building a separate English hospital for infectious diseases has been freely mooted.

It is to hoped that the Committee of the Medico-Chirurgical Society, suggested by Alderman Ames will make a full study and report upon the various points brought forward in this address, and thereby aid in improving the conditions now existing. Whether through this Committee or by other means, it would be well to have the medical profession in this city directly influencing the Health Department.

HIGHER EDUCATION IN MEDICINE.

A departure from routine has been made this year by McGill University in the granting of diplomas in Public Health to graduates who have taken certain special courses in sanitation and laboratory work on hygiene and passed a special examination.

The standard course of six months laboratory work and six months practical training in sanitation which was adopted, is that which has been for many years the basis of the English diploma in public health. As far as we know McGill is the first medical school on this continent

to carry out a diploma course of this nature. In order to make work of this kind fully successful, boards of health in the public interest should insist that applicants for official positions on their staffs possess qualifications of this nature. The well-known standard of Great Britain might with advantage serve as a model in regard to the length of the course and nature of the training demanded. Those who already hold the diploma are given an opportunity of taking special technical courses for which special certificates are granted. Thus the diploma would not represent a finality, but academic recognition could be given to more extended studies.

It seems to us that what holds good in public medicine, might also with advantage be applied to other lines of medical study. While we know that the medical degree received on graduation does not mark the end of its possessor's career as a student, but is really only the beginning of an endless course of study, the University has provided no way of recognizing academically further progress. We have often wondered why our regular medical schools have taken so small a share in guiding and encouraging post-graduate study. Why should not advanced courses leading to certificates or diplomas of efficiency, only to be obtained by those who really possess special qualifications in the particular subjects established? In the English titles of F.R.C.S. and M.R.C.P. we have examples of higher qualifications eagerly sought after by graduates, which have the special value in that one or the other is required of all candidates for positions on the attending staffs of the London hospitals. Similar regulations by our own hospitals would at once secure men of the highest qualifications for the staffs and make the degrees more sought after. The necessity of providing higher qualifications for medical graduates in Germany has recently been strongly advocated by Professor von Bergmann.

The tendency of medical education for undergraduates has been in the direction of a rapid raising of the standard, and in many schools this has been accompanied by a considerable latitude in the amount of time devoted to the various subjects. McGill has always held tenaciously and perhaps wisely to the idea that every medical student should be educated, if we may so express it, on strictly procrustean lines, and has not favored the introduction of optional or honour courses as substitutes for an equivalent amount of compulsory work in the same or in other subjects, so that the student on graduation has no special development in any particular line. By the introduction of post-graduate courses the higher education would be provided for without sacrificing the all round attainments on which stress is now laid.

With reference to undergraduate study in its relation to higher medical

education, we would point out again that the granting of a medical degree does not now mark the close of its holder's education so much as the fact that he has acquired sufficient knowledge and skill to enable him to become self-supporting without too great danger to the public. The fact of being able to support himself places him in a position to pursue further study. In considering the question of lengthening the regular medical curriculum, this point of view should not be lost sight of, and the modern tendency to inflation of the undergraduate course can undoubtedly be carried too far. The duty of medical schools is three-fold: First to see that those who enter the study of medicine have sufficient mental equipment to enable them to master that science, next to see that they are qualified to practice it when they get their degree, and lastly, to see that they are encouraged to continue their studies afterwards and perfect themselves as far as may be.

The very general desire for practical study on the part of medical graduates is an indication that efforts on the part of the teaching bodies towards higher medical education will probably meet with the approval of the profession at large.

ANNUAL CONVOCATION OF McGILL MEDICAL FACULTY.

The Annual Convocation of McGill Medical Faculty was held at the Windsor Hall, on June 15th, when the following announcement of the results of examinations was made by the Dean, Dr. Craik :

The following gentlemen, 75 in number have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from the University. In addition to the primary subjects they have passed a satisfactory examination, both written and oral, in the following subjects : Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children, Pharmacology and Therapeutics, Medical Jurisprudence, Practical and General Pathology and Hygiene, and also clinical examinations in Medicine, Surgery, Obstetrics, Gynæcology and Opthalmology, conducted at the bedside in the hospital :

Akerley, A. W. K.	Fredericton, N.B.
Armstrong, J. W., B.A.	Bristol, Que.
Baird, J. A.	Brucefield, Ont.
Ballantyne, C. T	Ottawa, Ont.
Beadie, W. D.	Lachine Locks, Que.
Bishop, T. E.	Harvey Bank, N.B.
Bradley, J. H.	Charlottetown, P.E.I.
Brown, E. L.	Chesterville, Ont.
Buffett, C., B.A.	Grand Bank, Nfld.
Burnett, P.	Montreal, Que.
Carnwath, J. E. M.	Riverside, N.B.
Charlton, A. J.	Montreal, Que.
Chisholm, G. A.	New Glasgow, N.S.
Clemesha, W. F.	Port Hope, Ont.

Coffin, J. D ..... Charlottetown, P.E.I.
Conroy, R. J ..... Peterboro, Ont.
Cook, C. R ..... Montreal, Que.
Costello, A. E ..... Montreal, Que.
Cowperthwaite, W. M ..... Carboneer, Nfld.
Cox, J. R ..... Hull, Que.
Cuzner, G ..... Ottawa, Ont.
Donnelly, A. J., B.A ..... Sturgeon, P.E.I.
Doull, A. E ..... Halifax, N.S.
Duffy, P. F ..... Charlottetown, P.E.I.
Eagar, W. H ..... Dartmouth, N.S.
Freeman, C. H., B.A ..... Milton, N.S.
Fourney, F. W ..... Montreal, Que.
Gilday, A. L. C., B.A ..... Montreal, Que.
Gray, H. R. D., B.A ..... Montreal, Que.
Hall, A. R ..... Washington, Ont.
Haszard, C. F. L ..... Charlottetown, P.E.I.
Henry, C. K. P ..... Ottawa, Ont.
Hiebert, G ..... Gretna, Man.
Hill, W. H. P ..... Montreal, Que.
Jardine, J ..... Freetown, P.E.I.
Jones, H A., B.A ..... Moncton, N.B.
Kannary, E. LeR., B.A ..... Northfield, Minn.
Keating, B. H ..... Moore, Ont.
Keating, H. L. T ..... Moore, Ont.
Lockhart, F. A. L ..... Montreal, Que.
McAuley, A. G ..... Ventor, Ont.
McConnell, R. E., B.A ..... Montreal, Que.
McDiarmid, W. B ..... Maxville, Ont.
McDonald, W. F ..... Westville, N.S.
McDougall, A ..... Kippen, Ont.
McKee, S. H., B.A ..... Fredericton, N.B.
McSorley, H. S ..... Enderby, B.C.
Martin, L. W ..... Warden, Que.
Morrison, A. S ..... Montreal, Que.
Morrison, G. D ..... Vankleek Hill, Ont.
Morrow, J. J ..... Fergus, Ont.
Murray, L. M ..... Truro, N.S.
Mussen, A. T ..... Lachine, Que.
Paintin, A. C ..... Mansonville, Que.
Paterson, W. F., B.A ..... Montreal, Que.
Pattee, F. J ..... Vunkleek Hill, Ont.
Patton, J. W. T ..... Ponds, N.S.
Payne, R. H ..... Kingston, Jamaica.
Peake, E. P., B.A ..... Oshkosh, Wis.
Pope, E. L., B.A ..... Belleville, Ont.
Porter, A. S ..... Powassan, Ont.
Richard, A. F., B.A ..... Richibucto, N.B.
Ross, H., B.A ..... Montreal, Que.
Rowley, W. E., B.A ..... Marysville, N.B.
Rutherford, A. E ..... London, Eng.
Sayre, T, D ..... Amherst, N.S.
Secord, E. R ..... Brantford, Ont.
Shaughnessy, C. R ..... St. Stephen, N.B.
Stevenson, H. R ..... Danville, Que.
Todd, J. L ..... Victoria, B.C.
Turnbull, J. A ..... Bear River, N.S.

Turner, W. G.....Quebec, Que.
Townsend, C.....Parrsboro, N.S.
Wilson, W. A.....Carleton Place, Ont.
Wood, D. F.....Faribault, Minn.

PRIZES AND HONORS.

THIRD YEAR PRIZEMAN—R. H. Kerr, B.A., Montreal.
SUTHERLAND MEDALLIST—J. McN. Collison, of Dixon's Corners, N.B.
SECOND YEAR PRIZEMAN—R. McL. Van Wart, B.A., of Fredericton, N.B.
SENIOR ANATOMY PRIZE—R. McL. Van Wart, B.A., of Fredericton, N.B.
McGILL MEDICAL SOCIETY JUNIOR PRIZES—First prize, C. Shearer; Second prize, M. Mackay.
FIRST YEAR PRIZEMAN—W. E. Nelson, of Montreal, Que.
JUNIOR ANATOMY PRIZE—N. D. Parris, of Barbadoes, W.I.

DIPLOMA OF PUBLIC HEATH.

The following graduates in Medicine having fulfilled all the requirements of the course in Public Health are qualified to receive the Diploma of the Faculty :

W. W. Ford, B. A., M.D.	H. S. Shaw, M.D.
J. E. Laberge	J. E. Williams, M.D.

The valedictory address from the graduating class was delivered by Dr. E. R. Secord, and was replied to on behalf of the Faculty by Dr. Burgess.

The Dean, Dr. Craik, then delivered the following sessional address:—

"The Convocation of to-day brings to a close the sixty-eighth working session of the Medical Faculty of McGill University. The calendar calls it the sixty-seventh, from some miscount of a former editor, and the error has not as yet been eliminated. The Faculty came to life in 1829, when its first session began with thirty students, and with the exception of the three years of the Canadian Rebellion, from 1836 to 1839, during which period no sessions were held, its yearly sessions have been continued without interruption, the session of 183940 opening with twenty-eight students. Of these sixty-eight sessions, it has been my good fortune to be more or less actively connected with no fewer than fifty. Fifty years ago the total number of students of all kinds in the Faculty was fifty-three, this year the total number was 478, or rather more than nine times as many, and thirty-one more than last year, when the number was 447. Of the 478 names on the register this year, 457 were those of undergraduates proceeding to the degree; the other twenty-one being graduates and partial students pursuing some special course of study.

"The 457 undergraduates have come to us from all parts of North America in about the same proportions as of late years, except that the proportion from Ontario is slightly increased, and that from the United States considerably so. The number from the United States this year was fifty-two, or 11⅓ per cent. of the whole, while last year the number was only thirty-eight, a percentage of 8½. From the two provinces of

Ontario and Quebec, the numbers are exactly equal—134 from each, a percentage of 29⅓. The number from the Maritime Provinces and Newfoundland was almost exactly the same as last year, a little over twenty-six per cent. The number from the Northwest Provinces and Territories was also greater this year, and there were two students from Ireland. The increased number from the United States is particularly gratifying, as showing the estimation in which our Canadian school is held.

"As regards the students in their different years, there were 135 in their first year, 126 in their second, 101 in their third, and 95 in their fourth year. It was feared by some that there would have been a falling off in the numbers in their first year, owing to the increase of 25 per cent. in the fees, rendered necessary by the exigencies of the Faculty, owing to the reversion of the graduation fees from the Faculty, as formerly, to the general funds of the University; and it is a matter for congratulation that the increase of fees, instead of reducing the number of those to whom it applies, has actually been accompanied by an appreciable increase, showing that the community sets a proper value on the advantages offered by our school to those seeking a sound and comprehensive medical education. The number of students in their third and fourth years has also increased considerably, while the number in their second year is exactly the same as in the previous year.

"The Faculty has made a new departure this year by the establishment of a new post-graduate qualification, entitled a 'Diploma in Public Health,' fashioned, with modifications, after the similar qualification given by some of the institutions in Great Britain, and very highly valued. We have four candidates to-day who have qualified for this diploma, and are entitled to receive it. They have undergone six months' laboratory training in hygiene, and have done six months' outside sanitary work; for the facilities in which latter work we are indebted to Dr. Louis Laberge, our courteous and able municipal medical health officer, and to Ald. Ames, Chairman of the Civic Health Committee. Mr. Chas. M. Holt, advocate, also kindly assisted us by giving a few lectures on sanitary law; so that the course can scarcely fail to be useful to those who intend to devote themselves wholly or in part to public sanitary or health matters. This is the first course of the kind that has been established on this continent; and as a proof of its usefulness, we already have an application for the services of one of the diplomats. The faculty work has been done under the able supervision of Professor Wyatt Johnson.

"The Faculty is now busily engaged in making extensive addtions to its present buildings, for the purpose of giving adequate accommodation to its ever-increasing classes. These additions and enlargements

are on a very considerable scale, in accordance with the expressed views of our generous benefactor and chancellor, Lord Strathcona, who so opportunely announced a little more than a year ago, in the names of Lady Strathcona and the Hon. Mrs. Howard, the munificent donation of one hundred thousand dollars, to provide additional accommodation for the Faculty. The work is now proceeding as rapidly as possible, but owing to our long sessions of nine months, leaving only three months in the year for building operations, the work will require two years for its completion, but when complete, we shall have a set of laboratories in anatomy, chemistry, pharmacology, histology, physiology, pathlology and hygiene which will bear comparison, collectively, with those of any medical school now in existence.

"I had occasion last year to call attention to the urgent need on behalf of the citizens of Montreal, even more than on behalf of the University and our Faculty, of much more ample and suitable accommodation for maternity work, and also the almost imperative necessity for the establishment of a hospital for infectious disease among our English-speaking population. The hardships produced by our lack of such an institution are almost unspeakable, and no community should be asked to bear them, for apart from the distress and suffering involved, it makes it impossible to keep these diseases within reasonable bounds, to the great danger and injury of the community, and a notable increase in its mortality. I am happy to say that, thanks to the untiring and tactful energy of Mrs. Miller, a large proportion of the funds necessary for the establishment of a new and commodious maternity on modern lines, has been already collected, and is now in bank, so that the attainment of this portion of our urgent needs may be said to be fairly in sight.

"Even in the other matter of the infectious diseases hospital for English-speaking people, I may say that light has begun to dawn upon us; for Ald. Ames, the able chairman of the Civic Health Committee, has been good enough to say that if the funds for the erection and management of the necessary buildings can be secured, he is assured that a suitable site will be provided by the city. This is an important point, for in all our previous attempts to establish such an institution, the question of a suitable site was always one of the most difficult with which we had to deal. The other part of the problem is not so difficult nor so expensive as might be supposed. Two or three, or, at most, four, plain brick buildings, plainly furnished, would be sufficient, and of these, seldom more than one or two would require to be in use at the same time, the others being disinfected and closed until again needed. The cost of management, moreover, need not be great, as a large proportion of those using them would be able and willing to pay, and the work could be supervised by the authorities of any of our large general hospitals.

"My dear friends, may I not earnestly ask everyone of you to help with all your might in satisfying this crying need of the English-speaking people of this city, before another winter is upon them, that they may no longer be compelled, as hitherto they have been, to cart their sick servants and children all over the city in search of shelter, and finding none, only to bring them back again to their own homes, where adequate isolation is quite impossible, and to spread disease and often death to their families and to the whole community?

"It only remains for me to say, that the work of the Faculty has been carried on throughout the session with zeal and efficiency. Scarcely a ripple has occurred to disturb the perfect smoothness of its working. The students, from juniors to seniors, in their conduct and progress, have given us no cause for anxiety. The graduating class is here to speak for itself. We have put our seal upon every member of it, as fit and worthy to be entrusted with the care of human life and health, and to do credit to his alma mater.

"The great wave of loyal patriotism that passed over the country had no reason to pass us by; it took from us some of our best men, and we parted with them in anxiety, but with every endeavor to minimize to the utmost the sacrifices which the interruption to their studies would necessarily entail. Most of them are now at the front, maintaining the honor of our Canadian soldiery. One of them, Mr. E. P. O'Reilly, of Hamilton, Ontario, now fills an honored soldier's grave in South Africa. He was a brave and honorable man, a good student, a general favorite, and gave promise of a successful career. We mourn his loss, but we are consoled by the thought that we have contributed such brave and useful men to do battle for our beloved Queen and Empire, of whose subjects there are none more loyal and devoted than those of Canada, of McGill University, and of our Medical Faculty."

After a few remarks from the Principal, Dr. Peterson, the proceedings were closed by singing the National Anthem.

ERRATA.

We regret that the following mistakes were made in setting up Dr. Bogg's paper, "Some Remarks Relative to Posterior Positions of the Occiput in Labour," which was published in the May number.

On page 347, 10th line from the bottom, "palm downwards" should read "palm upwards"; and in the next line above "face in vertex" should read "face into vertex." On page 348, 8th line from the top, "pelvic arch" should read "pubic arch."

At the Royal Victoria Hospital, only four new members have been added to the resident staff, Drs. C. T. Ballantyne, L. W. Martin, McKee, and Hiebert.

The different positions are filled as follows :—Medicine, Drs. Gillies, Tooke and Ballantyne; Surgery, Drs. Hiebert, O'Brien and Sutherland; Gynæcology, Dr. Turnbull; Ophthalmology, Dr. McKee; Anæsthetist, Dr. L. W. Martin; Loca Tenentes, Drs. Baird and Jardine.

The annual report of the Royal Victoria Hospital for 1899 has just come to hand. In addition to the usual statistical reports, special reports on Typhoid, Pneumonia and Acute Rheumatism are added, also the anatomical diagnoses of cases in which post-mortem examinations were made. We print the report on Typhoid by Dr. Gillies in our present issue. The mortality of 8.16%, although the highest in the history of the hospital, is remarkably low. An interesting case of cholecystitis complicating typhoid and successfully operated on is recorded.

A very pleasing function took place recently at St. James Club, Montreal, when the members of the teaching staff of the McGill Medical Faculty entertained the Dean, Dr. Craik, at an informal supper on the occasion of the presentation of his portrait.

Dr. Roddick took the chair, and in proposing the health of the Dean, referred to his many endearing qualities, to his unselfish efforts in the service of the Faculty, and to the great advances made by the Faculty under his leadership. Dr. Girdwood read a beautifully illuminated address, to which was appended the signatures of the donors of the portrait.

The Dean responded in his usual happy fashion, thanking his colleagues for the compliment paid him and referring to the harmony and good feeling which had always existed among the members of the Faculty.

The portrait, by Jongers, is a very fine one, and is hung in the Faculty Room of the Medical Department.

At a meeting of the Committee of Management of the Montreal General Hospital, the following gentlemen were appointed resident medical officers for the year : E. R. Sicord, M.D., C. K. P. Henry, M.D., W. G. Turner, M.D., J. W. T. Patton, M.D., W. H. P. Hill, M.D., L. M. Murray, M.D., W. E. Rowley, B.A., M.D., A. R. Hall, M.D., H. R. D. Gray, M.D.

These appointments are now made on the recommendation of the Medical Board of the Hospital, and every effort is made to select the most suitable applicants. Of the above gentlemen, Dr. Secord has had a brilliant college career, and in his final year took the gold medal and was elected valedictorian. Dr. Patton, who also has an unusually good college record, was final prizeman, while Dr. Henry carried off the Clemesha prize for Practical Therapeutics.

Dr. Wilkins, who has been acting as pathological *Interne* during the past year, has also been appointed a resident medical officer.

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PRESIDENTIAL ADDRESS.
THE MUTUAL RELATION OF THE PROFESSION AND THE PUBLIC.*

BY

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It appears to me that in these periodical gatherings of ours we are so much engrossed with the scientific aspect of medicine that we lose sight almost altogether of the ethics of our profession.

I have, therefore, thought it not unwise on the present occasion to depart from the traditional custom of my predecessors to devote a few observations to a subject which I deem to be of very great importance, not only to the members of our profession, but also to the public in general, namely: "The Mutual Relation of the Profession and the Public."

In dealing with a subject of this kind, I must necessarily say some things that would be out of place before a purely professional audience. In other words, my audience being promiscuous, my remarks must be of the same character.

I.

ATTITUDE OF THE PUBLIC TO THE PROFESSION.

Let us first enquire as to the present attitude of the public towards us as a profession. Is it one of confidence and respect? If not what are some of the causes contributing to this condition of things?

That there is not that measure of confidence and respect manifested towards us by the lay members of society which we have a right to expect is painfully evident. That there is adequate reason for this is not so clear. Does the fault lie with the public, or are there elements of weakness in our own ranks to account for it? To be able without prejudice to place the blame where it belongs requires careful discrimination.

* Read before the Annual Meeting of the Medical Society of Nova Scotia, July 4, 1900.

I am convinced, however humiliating the confession may be, that much if not most of this lack of appreciation which characterizes the public mind towards us is due to causes emanating from ourselves. What then are some of the vulnerable points in our professional armour that leave us open to attack ?

1. NARROW-MINDED JEALOUSY.

Good wholesome criticism of each other among ourselves is a legitimate practice that often results in very much good. But the pernicious habit of indiscriminate belittling of each other in the presence of the lay public is a fruitful source of that merited contempt which we so much deprecate and so much deserve.

We often meet physicians who are always ready and eager to disparage their fellow practitioners, who cannot view with equanimity their attainments or success—men who delight to magnify in others faults that are perhaps more conspicuous in themselves ; men who imagine that all wisdom dwells in themselves—who are always attributing false motives for the more generous acts of their more successful rivals, and who seek by detraction and misrepresentation to injure their professional standing. Such men, however clever they may be, can only bring contempt on themselves as well as on the whole profession to which they are not an ornament but a disgrace.

Every medical man and lay man in my hearing can recall instances of the most discreditable tactics resorted to by dishonorable members of our profession for bringing reproach on the fair fame or good name of an honorable rival, forgetting that the reproach which they seek to attach to the name of another recoils on their own heads and discredits the whole profession.

How much more honorable, how much more becoming and elevating to the profession if we should be always as ready to minimize each others imperfections, to condone each others faults and thus help a fellow laborer over the rough places in his professional journey.

2. MISFITS.

Like every other profession or calling in life, ours is not exempt from the misfortune of misfits.

There are men in our ranks who are failures because they lack in some or all of those characteristics that enter into the general make up of a good physician.

What are some of those qualifications ? A love for his calling. A consciousness of his great responsibilities. A keen perception of human nature. A large share of sympathy for human suffering. And a competent measure of common sense. Of course a thorough knowledge of his profession is taken for granted as an essential element of success. Few medical men are endowed with all these virtues in their full develop-

ment, but without a competent share of some of them we must fail to impress the public that we are fit to represent a great and noble profession. And yet I know some and have heard of many others who manifest in splendid reality these elements of a good physician. We cannot all be "McClures," but we can strive to imitate this noble ideal.

3. SNAPSHOT DIAGNOSIS AND SLIPSHOD PROGNOSIS.

There are hundreds of people living to-day to laugh at the physicians who told them many years ago that they had but a short time to live.

There is nothing so embarrassing to the average physician as the importunities of his patients and their friends regarding the nature and issue of their illness.. "What is the matter," and "will he get well," are questions that ring in our ears with ever increasing emphasis till we are almost in despair. Sometimes there is no escape from the assaults that are made on us by interested and disinterested friends as they take up one after the other all the strategic positions on the premises as we are taking leave of our patients; and if we are fortunate enough to escape the vigilance of this advance guard it is only to be waylaid by some kind neighbor along our line of retreat. These interrogations could often be borne with Christian resignation, were they not put with the same sublime indifference as questions regarding the weather or a dog fight.

There are times when it is the undoubted duty of the physician to be plain with his patients and their friends, to warn them of the probable issue when there are interests at stake demanding prompt action. But in the great majority of cases a prudent reserve will best serve the interests of patient and physician.

The candid physician is an admirable character provided his candor is fortified by sound judgment and definite knowledge. And people should know that the specific duty of the physician is to treat his patients and not their friends, although it is often more difficult to do the latter than the former.

4. COMMERCIALISM.

Medical men have rights as well as other people.

They have a right—and it is even their duty—to provide for themselves and their families. They have a right to look after their own health, although this is often a most difficult matter. And with a view to these ends they have a right to charge reasonable fees and to take adequate steps to collect them. God knows that the conscientious physician earns all he gets and a great deal he never gets. These rights of the physician will readily be conceded. But they are only subordinate and conditional. Subordinate to the interests of his patients and conditional on having performed his whole duty to those who have entrusted him with their lives. We have no right to prostitute our skill or

our talents to the mere getting of money. The interests of our patients and the honor of a noble profession have first claims on us, and in so far as we depart from this line of professional rectitude we depart from the true genius of our profession which is to relieve pain, to save life, and to practice charity.

5. MISCONCEPTIONS.

So far we have been considering some of the defects in our own ranks that contribute to that lack of cordial appreciation of our services which we have a right to expect from a generous public.

For these blemishes on the escutcheon of an honorable profession the members of that profession are directly responsible. But there are other causes operating to bring us into contempt; causes for which we as a profession are not directly responsible. These causes emanate from the people themselves who misconstrue the true aims and motives of the profession. It is a strange thing, but true, that every community, every society, every church, every profession, is judged not by the many true and loyal members but by the few unworthy ones that are to be found in all these. That there are defects and serious defects to be found in all of us and in the best of us is beyond dispute. But that the profession as a whole is actuated by unworthy motives is a charge to which we plead "Not guilty."

There are other things we count dearer than fame or money or comfort. We have characters to maintain untarnished; we have reputations to build up and guard; we have the honor of a noble profession to uphold. These are heritages that money cannot buy—that selfishness and unmanly bickerings cannot give us. The true physician would rather die a poor man with an approving conscience and the benediction of some fond mother whose son or daughter he had helped through a critical illness than die rich in filthy lucre despised by those whom he had despoiled—whose last dollar he had taken for services of doubtful value rendered only with a view to his own personal interests.

Even when we come to these society meetings our motives are misconstrued. Some people say we meet to devise ways and means for the betterment of our material interests—to discuss fees and finances. Although we might very properly devote a part of our time at these meetings to a discussion of these and kindred topics—although we would be within our rights in safeguarding ourselves against ungrateful and unscrupulous patients who sometimes try to defraud those who had been instrumental in rescuing them from the perils of their own indiscretion; without, I say, relinquishing any rights which we may have in protecting ourselves against rogues and robbers, I am proud to be able to say that these are not the themes that occupy our minds on occasions like the present.

We meet for the mutual exchange of practical ideas that may be of service to us in the discharge of the great trust that is committed to us; that we may be the better equipped for fighting the great battle that we are waging against disease and suffering. We meet too that we may see old friends and make new ones. And as "iron sharpeneth steel," so we by rubbing against each other may sharpen our wits; and by mutual contact with each other we may learn to love what is good and noble and manly in our fellow practitioners, and thus learn lessons that shall make us better men and better physicians.

Then again, it must not be forgotten that there is no professional man who so much needs and so rarely can take a holiday as the medical man. Even when we do succeed in getting away from home we are not free from fear of being summoned home to minister to the fears or necessities of some poor fellow mortal unless we can go where there are no means of communication which is a difficult matter in these days of telegraphs and telephones.

Then there are in the minds of the people misconceptions as to the nature and scope of the science of medicine. The public generally know less of this than of any other science. And this lack of knowledge is the origin of many superstitious notions, even among people who are otherwise well informed; and is largely responsible for that unfortunate craze for quack medicine and quack doctors, which in our day has assumed the proportions of an epidemic. Anything partaking of the nature of humbug has a peculiar fascination for many people. A patent medicine advertisement surmounted by the picture of a Red Indian with feathers on his head, or that of a man with electric sparks radiating from various parts of his naked body has for some people an irresistible charm. The charlatan who talks mystery is to them the embodiment of wisdom.

There is no mystery in medicine. The mystery is in the mind of the man who arrogates to himself occult powers, who ignores the accumulated experience of an educated profession—who vaunts his remedies as "cure alls" and preys on the credulity of an afflicted public with no other object in view than how much money he can get out of them.

Time would fail to even enumerate the false notions in the minds of the people as to the scope, the aim and the objects of the science of medicine. Perhaps one of the most common and the most baneful in its effects is the idea that every disease has definite symptoms and is labelled with its antidote and that all the physician has to do is to find out the name of the disease, apply the antidote and cure the malady. Nothing can be further from the truth than this idea; and the more enlightened the people become on this point the lighter will be the burden of the medical man. Let them learn that the great majority of diseases run their course and terminate by a natural process without

medicine and often in spite of medicine; that many diseases have many symptoms in common; that it is only after patient waiting and watching that they can be differentiated; and that in many cases a diagnosis can be made only in restrospect. They should know that after all nature is the great healer and that our business is to assist her in her beneficient designs; to study the patient rather than the disease—to learn his peculiarities—to adapt our treatment to the conditions as they arise—to relieve pain—to cheer and encourage our patient and thus help him aver a crisis; or, failing to do this as fail we often must, to smooth his dying pillow and show by our sympathy that if we cannot always save we can sometimes administer comfort.

II.

REMEDIES.

What are some of the remedies for this condition of things that we have been so far considering?

1. DO OUR DUTY TO OUR PATIENTS.

The first and paramount duty of the physician is to his patient. Everything else should be secondary and subordinate. All our time if need be is his. Nothing short of the very best we can do will suffice. When the unfortunate victims of disease and suffering appeal to us for help they expect us to do our utmost on their behalf; and the physician who suffers considerations of personal comforts or pecuniary advantage to interfere with this sacred duty is not worthy of his high calling.

It is to be feared that too many of us transgress the tenets of our profession by a too solicitous regard for our own comforts and even for our own personal dignity. Dignity is a commendable ornament to carry around with us when we can do so without detriment to the interests of our patients, but when life and death are at stake, dignity to the dogs!

When duty calls, no consideration, social, personal or pecuniary, should stand in the way. To do good and practice charity is the gospel of the medical man.

2. MAINTAIN THE HONOR OF THE PROFESSION.

Ours is a noble profession, and if we would merit the respect of the lay public we must respect ourselves. To this end it is not enough that we comport ourselves in such a manner as to be above reproach. We must qualify ourselves for the great responsibilities that rest upon us as a profession. We must maintain the highest standard of professional education consistent with our opportunities and limitations. We must be scientific physicians as well as moral men. We must discountenance quackery in our ranks as well as out of our ranks. There are many

charlatans practising under a regular diploma and protected by a certicate of registration, men who degrade their high calling by pandering to popular applause—by resorting to illicit and irregular methods for gaining practice or position. It is the duty of an enlightened and united profession to frown down anything and everything that savors of meanness or professional misconduct. Not until we rise above the strife and meanness and chicanery that disfigures the noblest of all professions, save one—not until by self-sacrifice and professional uprightness we prove ourselves worthy, shall we receive that due measure of public recognition which we so much long for.

3. EDUCATE THE PEOPLE.

Could we succeed in eradicating from the public mind the various forms of error regarding the theory and practice of medicine we would succeed in removing one of the most effective barriers to our individual usefulness, as well as one of the chief causes for that lack of cordial appreciation of our merits as a profession to which I have already adverted. That this would be a task of herculean proportions, I readily admit; but a due appreciation of its importance, a just conception of our responsibilities as public educators, would remove many a difficulty. Our spheres of usefulness are not limited by our daily routine of seeing patients and prescribing for them. We must educate them. Our daily contact with the people and our intimate relation to them as family physicians gives us many opportunities of imparting instruction on matters medical. Much information can be given without compromising the private rights of the physician or the dignity of the profession. Some of the medical journals are advocating popular addresses on medical topics on the evenings set apart for the expensive and useless banquets. I commend this to the earnest consideration of this society.

It is not enough that we do our best to lift up the people to a higher plane of scientific medical knowledge. It is our business also to instruct them in the laws of health—to teach them temperance, temperance in eating and drinking,—temperance in the indulgence of those organic functions, the abuse of which makes so many moral and physical wrecks. It is our duty to show the people how to restrain their passions by restraining our own—to elevate the standard of moral and physical purity the fostering of which is an earnest of the highest type of manhood and womanhood. In order to teach purity the medical man must be pure himself ; pure in thought, pure in word, pure in act, so that by practice as well as by precept, he may win the confidence and esteem of those with whom his daily rounds of duty bring him in contact. The churches are sending medical missionaries to the heathen. There is much need of them at home. It is our duty to preach as well as to practice.

4. BE GOOD CITIZENS.

Passive obedience to law and order does not alone constitute good citizenship. There must be active work for the good of the community.

There are many social and domestic problems with which the physician is peculiarly qualified to deal. His intimate relations with the members of society as family physician give him many opportunities of learning the secret vices that are sapping the foundations of the social fabric. It is not enough that he should warn privately those whose follies are undermining their physical constitutions. It is necessary sometimes that public action be taken to protect society and especially the youth of our communities against contamination and vice. Even the refinements, so called, of modern society, sometimes require the veto of the physician. We should have the moral courage to denounce what is debasing and dangerous in social life and customs. The physician should also identify himself with all measures looking to a betterment of the intellectual, educational, industrial, and recreative pursuits of the people.

In order to be a good citizen it is not necessary that we be politicians. I think the best interests of the profession as well as society would be served by abstaining from active participation in political strife.

The physician is sometimes appealed to by aspirants for political honors to use his influence in their behalf. I think a proper conception of our relation to our patients forbids us taking advantage of this relation for the purpose of influencing free choice or free action. The average physician cannot afford to be a politician. He has a right to think—to discuss men and policies and even to vote that he may promote good government; but to be an active partizan is against the genius of our profession.

Of course there are bright and shining lights in our ranks who may and ought and do enter the arena of practical politics. The interests of the profession and the public demand their presence in our legislatures.

Some distinguished physicians have become distinguished statesmen. Such men reflect credit on the profession and are better representatives because of their intimate acquaintance with the frailties of human nature and the wants of the people.

III.

ATTITUDE OF THE PROFESSION TO THE PUBLIC.

Whatever difference of opinion there may be as to the attitude of the public towards the profession, there can be no doubt as to the converse of this.

The history of medicine from remote ages down to the present time proves beyond cavil that this attitude is one of unselfish devotion to the best interests of the people.

The unprecedented progress in medicine and surgery during the last half a century attests the unwearied industry of patient investigators in every department of medical work. But it is not necessary to go outside of the rank and file of the busy workers in our profession to find proof that the life of the busy practitioner in city and country is one of unceasing toil for the good of others. But if further proof were needed to show the unselfish character of our attitude as a profession, it will be found in the stand we take on the question of preventive medicine.

I think it safe to say that there is more effort put forth—more brain work expended—more privations endured, more heroism manifested by patient workers in this department of medicine than in all the other departments combined. And rightly so, because we can save more lives by prevention than by cure. And why all this patient labor and research? To open up new avenues of wealth for the practising physician? To devise new schemes for getting into the pockets of the people? No! It is a labor of love. It is work undertaken without hope of reward, except the reward that comes to us in common with the other citizens of the commonwealth through the increased security to life and health as the result of sanitary reform.

It will readily be admitted that the more disease there is among the people the greater the source of revenue for the doctors. If then, as some people say, the doctors are concerned only about matters affecting their own pecuniary interests why do they toil and plead for measures to prevent and suppress disease? The present state of sanitary law and quarantine in all civilized countries is a standing testimony to the unselfish character of the medical profession.

I have seen it somewhere stated that altruism is the foundation of all sanitary science and law. To the medical profession is due the credit of initiating and putting into operation all practical measures for the prevention and suppression of preventable disease in every country where sanitary laws are in practical operation.

What would be the condition of our country to-day if these safeguards and restrictions were withdrawn? We enjoy comparative immunity in our homes to-day, because there are faithful watchmen ever on the alert to raise the danger signal whenever and wherever we are threatened with an outbreak of the ordinary contagious and infectious diseases that are always lurking in sporadic form in various parts of the province, as well as the more virulent epidemics that threaten us from abroad.

IV.

MUTUAL CO-OPERATION FOR THE COMMON GOOD.

In order that there may be mutual co-operation there must be mutual trust. Do we as a profession merit the confidence of the lay public? Do we discharge in full the responsible duties of our high calling?

The relation of the physician to his patient is a sacred one. Do the people fully realize this relation ? The family physician is not only the custodian of your physical health and well-being, but also of your family history. He is the father confessor to whom are committed the dearest secrets of your life. To him are known your secret vices and your worthy and unworthy motives. And yet many people dismiss their physician as they do their grocer or their butcher. They treat their physician on the principle "for value received." I pay my doctor as I pay my hired man; and when my ends are served I dismiss him with the same scant courtesy. This principle is vicious as well as false. The correct principle would be, "For services which cannot be computed in dollars and cents, I contribute of my means to help my doctor to live, and knowing as he does my secret life, I shall ever esteem it my privilege not only to show him my gratitude, but to retain his friendship."

What is your life worth ? And yet some people treat their physician as if it were not worth very much.

Is there any reason for this condition of things ? Do any of us basely betray those private and family secrets that come to us through our relations with our patients ? The pertinent, and I had almost said impertinent, questions put to us by anxious enquirers regarding the troubles of their neighbors, sometimes lead the unwary physician into forbidden liberty with the sacred rights of those whose misfortunes compel them to lay bare to him the secrets and the motives of their lives. Let us guard this sacred trust and so merit the confidence and esteem of the public.

I have already adverted to the work of the medical profession in the field of sanitary medicine. Notwithstanding this work and the comparative immunity of our province against preventable disease, there remains yet a great deal to be done along these lines. And it is only through the active and intelligent co-operation of the people that this work can be successfully accomplished. In order to secure their co-operation the public must be educated not only regarding the necessity for sanitary regulations, but also as to the reason for them. I meet people every day who deny the infectiousness of such diseases as diphtheria and typhoid fever. These people have the audacity to advance their opinions against the accumulated experience as well as the scientific knowledge of all ages. Our first duty then is to remove these gross errors and thus prepare the public mind for submission to legal enactments for checking these diseases as well as for active co-operation with the medical profession and the health authorities for putting these regulations into practical operation. Our Provincial Board of Health under the chairmanship of the indefatigable Dr. Reid, is doing valiant service in this department of work, not only in guarding against epidemics, but also in enlisting public and professional sympathy and co-operation. Do they receive

from their fellow practitioners or the public the encouragement and assistance they deserve? Notwithstanding this apathy there are not wanting evidences that the trend of public opinion as manifested through our representatives in parliament is in the direction of a recognition of the necessity for definite action to promote this very important branch of the public service.

It has always been a puzzle to me whether our legislators should lead public opinion or whether public opinion should lead our legislators. One thing, however, is certain, that when public opinion demands reform of any kind our legislators must bow to the mandate of the people. The logical inference then is; let the profession educate the people and let the people educate their representatives, and let the representatives give us legislation.

The great desideratum in this province as in other provinces is adequate funds for putting into practical effect regulations and laws already on our Statute Books. But we have no right to demand legislation involving the expenditure of public money unless the people are prepared to endorse such legislation. The medical profession are a long suffering profession. We devote a large portion of our time to gratuitous work. And although we are always ready to respond to the call of charity there is a limit to our forbearance. Is it fair then after we have spent much time in devising sanitary measures which are primarily for the public good to ask us to do municipal or departmental work for nothing? Boards of Health, Sanitary Inspectors and other officers whose duties are not only responsible but sometimes onerous are entitled to remuneration for their services. A healthy public sentiment on this aspect of the case would secure for us legislative and municipal recognition.

We are not unmindful of the fact that our influence and representation in this direction are not without some effect. It is gratifying to know that our federal and local authorities are awakening to the importance of this branch of the public service. This is evidenced by the fact that the authorities at Ottawa last year sent a delegate—one of the leading members of the profession in this province to the Congress on Tuberculosis which met in Berlin. Dr. Farrel's report of that convention has been circulated among the members of the profession and others. It is a succinct résumé of the proceedings of that convention and their conclusions on the subject of tuberculosis; and this society could not better contribute to enlighten public opinion on this subject than by causing copies of this report to be more generally distributed among the people.

We hail also with pleasure the Act of our Local Legislature by which they have appropriated a sum of money for the erection and maintenance of a Sanitarium for tuberculous patients—also for sanitary inspection in the various municipalities of the provnce. This latter will help pay the

expenses of those officers should their duties call them into the more remote districts of the counties. These are pledges, we hope, of better things to come. But they are not enough. We want more. $15,000 is not enough to provide accommodation for all the patients that would take advantage of Sanitarium treatment.

Then again, we want a Bureau of Vital Statistics. Year after year the attention of this society has been directed to the importance of this matter ; and year after year representations are being made to our legislatures to have this defect remedied, but without avail. I am not aware that any united action has been taken by resolution of this society. A venture in this way might prove more availing.

The subject of tuberculosis is one of transcendent importance and now that it is recognized as a contagious disease it is essential that definite steps be taken to enlist public co-operation in our efforts to abate its ravages.

Last year a very able paper on this subject was read before this society by Dr. A. P. Reid. In this paper the author deprecates the lack of interest manifested by the profession generally on the subject. This charge is well taken. Upon the members of the profession rests a tremendous responsibility in this respect. To us are committed the most vital interests of the people—the lives and well-being of their friends and loved ones. Let us rise to a due sense of this responsibility, for not till then can we hope for much progress to be made.

That vast and almost insuperable obstacles to a general diffusion of knowledge on the subject of sanitary science present themselves is a lamentable fact. Notwithstanding these difficulties—difficulties arising out of lack of education and the prevalence of superstitious notions there is much that can be done by the physician in his private intercourse with the people to enlist their sympathies and enlighten their minds in behalf of such measures as are necessary for carrying out preventive measures against this fell destroyer of the youth and flower of our land.

Then again, we want a thoroughly equipped laboratory for bacteriological investigation. No Board of Health can carry out any adequate system of sanitation without this. Our Board are doing what they can under very adverse circumstances, and to Dr. Hattie, under whose charge this department is, are due the thanks of this society for his faithful services and courteous consideration. But to make this or any other department of public health thoroughly effective we must have funds. How are we to obtain these funds ? Either from private philanthropy or from the state. Private philanthropy is not cosmopolitan enough in its sympathies to be depended on. Public health is of universal import. Every man, woman and child, is affected for good by the enforcement of sanitary regulations. It is, therefore, but right that all should contri-

bute in order that its provisions may be properly administered. A direct tax would not be popular in the present temper of the people. The only alternative, then, is the ordinary revenues of the state. How are we to secure legislation to this end? By enlisting public sympathy and co-operation.

A word or two regarding the work of the Provincial Medical Board. This Board is doing good work in guarding our ranks against inferior recruits, and in protecting the public against irregulars. But their hands are tied, first, for want of funds; secondly, for want of public sympathy. The public charge that the crusade of the regulars against quacks and the vendors of nostrums is begotten of selfish motives. We repudiate this charge. Every medical man knows and the public ought to know that if these charlatans were left unmolested, the carnage that would follow would add materially to the practice of those that are fighting to suppress them. We are fighting them, not because they interfere with our business, but because they are a menace to public health and life; not because we want to protect the profession, but because we want to protect the people. We want the sympathy and support of the people in our laudable efforts to rid our country of this pestilence. For while public sympathy is with those who defy the law it will be impossible to get evidence to convict the law breaker. Every physician and every layman in my hearing can testify to numerous instances of irreparable loss of health, and some instances of loss of life clearly traceable to the gross ignorance or culpable presumption of those sharks who go about seeking whom they may devour.

The Provincial Medical Board are doing what they can to exterminate these enemies of the public health, but they want funds to prosecute and evidence to convict. These prosecutions are for the public good. The public should encourage our efforts and by sympathetic co-operation help to put down fraud and deception.

The medical man has much to contend with in his efforts to promote public good. Among these difficulties there is none more discouraging than lack of public sympathy. But in the midst of our discouragements we are not without hope that with an enlightened public sentiment on our side, and a united medical profession to work, our efforts will ultimately be crowned with success. And then with antiseptics and antitoxins and sanitation and sanitoria and quarantine laws and well paid officers to administer them, there shall be universal health and men shall die only because they will be too old to live.

CHILLS IN TYPHOID FEVER.

BY

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The attention of clinicians has been particularly called within recent years to the occurrence of extreme rigors associated with typhoid fever, either in the regular course of the disease or in some of its more serious complications. In Southern latitudes, especially, where the presence of chills in various fevers is apt to be ascribed to the growth in the blood of the malarial parasites, the exhibition of rigors in typhoid fever is usually considered to be due to a combination of intermittent and enteric fever, and the suspicion always exists that the sudden rise and fall in temperature is not due to the typhoid lesions but to the plasmodium malariæ.

A number of cases of the combination of malaria and typhoid have been reported in the Medical and Surgical History of the War of the Rebellion, where the soldiers stationed in southern camps under unhygienic conditions contracted both diseases. For a number of years the occurrence of these two diseases in combination was a subject for great dispute, and the question was only finally settled after the outbreak of the Spanish-American war, when soldiers returning from the Phillipines were found to have large numbers of malarial parasites in the circulating blood, and to have as well the clinical symptoms of typhoid fever, including a positive Widal reaction, which persisted after the disappearance of the parasites from the blood after the administration of quinine.

The following case which occurred in the Medical Wards of the Johns Hopkins Hospital in the service of Dr. Osler, which by his permission is here reported, represents a combination of symptoms which for the period of the entire stay of the patient in the hospital was looked upon with suspicion as being a combination of typhoid and malaria, but which during life to all apparent observations was absolutely negative for malaria and which at autopsy showed positive evidence of the lesions of typhoid fever.

Case: Daniel Ryan, æt. 40, white, painter by occupation, admitted to the Johns Hopkins Hospital, March 5th, 1899, complaining of stomach trouble and rheumatism. Family history negative for constitutional diseases.

Personal History: Smallpox at 10 during the Chicago epidemic, no history of malaria at any time; rheumatism at 22, beginning in the

joints of both feet which were swollen and painful, tender to the touch. Both knees were then involved, then hips, hands and shoulders. No reason could be given to account for the attack. Has used lead in painting for the past 15 years, but has had no attacks of lead colic. Lues; initial lesion at 20, secondary eruption on face, mucous patches in mouth and throat; no rheumatic pains and no loss of hair. Was treated for this at Hot Springs, Arkansas, and has had no symptoms since the secondary eruption.

Contracted gonorrhœa at 22, treated with injections and since then has had a stricture. Is in the habit of drinking two or three glasses of whiskey daily for periods of several weeks at a time, after which he will totally abstain for a corresponding period. Has never been in the habit of drinking to excess and has not used tobacco except for occasional chewing. Has usually been a healthy vigorous man up to the time of his present illness.

Present Illness: Patient stated that his first trouble began about two months before admission, when he noticed that he was feverish, held his head up with difficulty, lost his appetite, had severe frontal headache. This has been practically persistent since onset of trouble. He was dizzy at times. His arms and hands felt as if they were asleep. He had sensations of numbness throughout the whole body. No epistaxis. At this time patient began to have a series of chills which came on whenever he was exposed to cold and at indefinite times of the day. These chills were severe shaking rigors, and were followed by heavy sweats. Patient also had night sweats. For several weeks he has had a dry cough, at first painless but later, accompanied by painful sensations in different parts of the body; expectoration considerable, but not blood stained. Has been feverish at times since onset of disease and is constantly thirsty. No appetite, eating followed by nausea and vomiting. During this period has had definite attacks of rheumatism in knees, shoulders, elbows and hands, one knee especially involved, the other not swollen or painful.

Soon after the onset of these symptoms, patient entered the Charity Hospital, Savanah, Georgia, where he was treated for syphilis. Patient remained here for about a month when he left because he thought the mercury and iodides which he took upset his stomach. He was somewhat improved, however, and went to Richmond, Virginia, where he worked at the Soldier's Home. At this time the chills, followed by fever and sweating, became a very marked symptom of his disease and at Richmond he was treated for malaria and took large doses of quinine. He felt weak, had no appetite and was frequently feverish, had pains in different parts of the body and was utterly unfit for any active exertion. He remained in Richmond for several weeks and then came to Baltimore and was admitted to the Johns Hopkins Hospital.

On questioning, patient stated that he had had an acute attack of rheumatism (?) in the right leg and knee which came on abruptly two weeks before admission. He gave no history of attacks similar to gall stone colic and no history of attacks of jaundice at any time. Bowels were irregular, much constipated; appetite very poor. Patient has not eaten a good meal for over two months, is able to retain only soft eggs and milk. Micturition normal.

Condition on Admission: Complexion sallow; conjunctivæ faintly yellow; no cyanosis or dyspnœa; lips and mucous membranes of good colour; patient looks decidedly sick, is dull and slow-minded, but answers questions rationally. Tongue is slightly coated, breath very offensive; a few greyish spots on the posterior wall of the pharynx; no ulcers on membrane. Pulse slightly dicrotic, large volume, low tension. Patient has a distinctly typhoidal appearance.

Lungs: A few fine râles at the end of inspiration in both upper lobes. Heart sounds clear; abdominal examination negative. Liver not enlarged; spleen not palpable. Abdomen soft and full, tympanitic on percussion, but not distended, no tenderness and no foreign mass to be felt; no rose spots.

The right leg is much enlarged, the tissues of the calf being swollen and indurated, the superficial temperature is elevated, there is considerable tenderness on palpation. About the middle of the calf is a ridge-like swelling, hard and sensitive, just below the line of the popliteal vein. In the popliteal space the tissues are swollen, œdematous and tender, there is much induration over the course of the popliteal artery and vein. The whole leg is swollen and œdematous pitting on pressure the circumference of right calf measuring 4 c.m. greater than the left.

Course of Disease: The patient's temperature on admission was $102^{2}|_{5}°$. It rose immediately to 104° and then to $105^{2}|_{5}°$, when the patient had a hard shaking chill. It dropped again to 103 and rose to 105, and at this time the patient was covered by a most profuse perspiration. His temperature now gradually fell to $101^{6}|_{10}$. During the night the patient's temperature was very irregular and fell from $102^{6}|_{10}$ at 8 o'clock the day of admission, to normal at 10 o'clock and to 97 by the afternoon of the second day. During this time the patient looked considerably upset, the sweating was profuse, rendering a constant change of garments necessary.

There was no increase of the slight yellow tinge of the skin and conjunctivæ which had been noticed on admission and no pain in any part of the body. The spleen could not be felt, the liver was not enlarged, there was no tenderness over the gall bladder. The swelling and tenderness in the popliteal space had not increased, and if anything was slightly less than on the previous day.

The leucocyte count was 7300 on March 5th, the day of admission, and 7500 on the 6th. Fresh specimens of blood examined repeatedly for malarial parasites were absolutely negative, even though they were taken before, during and after the chills. The examination of the sputum was likewise negative. The differential blood count on March 7th, showed a great increase of polynuclear leucocytes, over 90% being of this variety.

During the afternoon of the second day the patient had a very hard shaking chill, lasting for nearly an hour; his temperature rose rapidly from 97 to $102^{6}|_{10}$, after which it fluctuated for a degree or two for about four hours, when it reached 104, and the patient had another severe shaking chill. Both chills were followed by the same profuse sweating as was noticed on the previous day. His temperature now dropped from 104 at 10 p.m. to 102 at 2 p.m. and to $96^{6}|_{10}$ at 4 p.m.

For the next few days patient's condition remained practically unchanged. He continued to have slight irregular elevations of temperature, but no shaking chills and no attacks of profuse sweating. The diagnosis of the convalescent stage of typhoid fever with thrombosis of the popliteal vein was made provisionally by Dr. Osler.

On the 4th day the patient had a severe pain in the left side of the chest and on auscultation there was a well marked friction rub in this area. The blood gave a positive Widal reaction in dilutions of 1—10 and 1—50. This reaction was always given by the blood of the patient from entry throughout his entire illness. On a number of occasions the reaction in dilutions of 1—100 was very rapid and perfectly characteristic.

On the 5th day the patient had another severe shaking chill, the temperature rising from 98 to $101^{6}|_{10}$ and to $102^{6}|_{10}$, after which for half the night it remained at this point, then suddenly dropped, reaching 95° the following afternoon, a fall of nearly 7½° in 14 hours. This chill was accompanied as well by profuse sweating and great constitutional discomfort.

The Urine was turbid with a trace of albumin and a good many pus cells. Cultures gave a pure growth of typhoid bacilli, the organisms being typical, giving positive reactions on culture media and with the blood of patients suffering from typhoid fever. The administration of urotropine was begun a few days after admission with the result that after its administration the number of colonies from a given quantity of urine, gradually diminished, but at no time was the urine free from the typhoid bacilli.

The blood examination during this period was quite interesting. Although fresh specimens were examined constantly, both by day and night, and during and between the chills, there never was the slightest

evidence of the presence of any of the parasites of malarial fever although the recurrence of the chills and their irregular type led to the suspicion that we were dealing with a case of æstivo-autumnal malarial fever, and although the patient had been exposed to the different forms of malaria while living in southern countries.

The leucocyte counts were generally between 7000 and 8000 with the beginning of the chill. During the height of the fever the leucocytes would rise to 17,000 or 18,000, and frequently to 30,000, the increase being entirely due to the polymorphonuclear elements. Practically every rigor was accompanied by such a leucocytosis. The red blood count was 3,596,000, the hæmoglobin 65%.

The physical condition of the patient changed but little, the friction rub on the left side increased and the pain in this region became more marked; the spleen became palpable, very low down, the border round and soft, the area of splenic dulness much increased. The patient developed no rose spots and no jaundice and had no other symptoms of typhoid fever. The induration and swelling in the right calf in the popliteal space rapidly diminished and the patient was able to move his leg with considerable freedom. It was Dr. Osler's opinion that we were dealing with a case of typhoid fever with thrombosis.

On the 8th day at 10 p.m., the patient's temperature which had been $102^{6}|_{10}$, dropped suddenly to 100, and he was attacked by a most violent rigor. The temperature rose immediately to $105^{1}|_{10}$, and fell in five minutes to $96^{2}|_{10}$, a drop of 9°. With this sudden fall there were most profound discomfort and general prostration; the temperature remained subnormal for only two hours, after which it rose to $99^{6}|_{10}$. It fluctuated about the normal for the next two days. Blood cultures were now taken both anærobically and ærobically with negative results, but as we have said, the typhoid bacilli remained in the urine and the Widal reaction was positive.

On the 11th day the patient had another chill with a sudden rise of temperature and fall to 2° below normal, and now for several days the patient's condition remained practically unchanged. He had chills irregularly and unexpectedly at different times of the day and night, they were not, however, so violent in character nor accompanied by such great prostration; between the chills the temperature became persistently subnormal and remained so up to the day of his death.

The patient's physical condition rapidly deteriorated, weakness became more marked, mental condition decidedly unfavorable, he answered questions rationally, though it was with great difficulty he could be got to answer at all. Emaciation was profound, appetite completely lost without vomiting; there was no increase of the slight jaundice noticed on admission, in fact at times this jaundice seemed to disappear.

The blood condition was not changed, the leucocytes remaining normal between the rigors. At this time a curious attack of respiratory distress was noticed by the attendants, and the patient became very difficult to manage; he constantly complained of great pain located in the chest or abdomen, and was markedly short of breath. The examination of the chest was quite negative.

Patient became quite unruly, refused to have his temperature taken, and refused to take medicine or food; was not actually delirious, but always somewhat confused. He gradually grew worse, and his unfavorable symptoms became more marked.

On March 22nd, 17th day after admission, the patient, whose temperature had been subnormal for five days, suddenly had a shaking chill, temperature rising from 98 to $102^{6}|_{10}$, afterwards dropping to 99. He had no further chills after this, his temperature persistently remaining subnormal. On the night of this day the patient was exceedingly uncomfortable, very restless, suffering greatly from dyspnœa and constantly sitting up, moving about and trying to get out of bed. He was controlled with considerably difficulty by the nurses and orderlies. The respirations were labored, both inspiration and expiration greatly prolonged. On examination there were a few moist râles over both lungs.

The jaundice now became very marked, the skin and conjunctivæ were deeply tinged and had a yellowish brown color. The edge of the liver became palpable and there was some tenderness below the right costal margin. The pulse was very soft, quite irregular and easily compressible, not accelerated.

From this time the patient rapidly went to pieces, the most marked feature being the persistent irregularity of respiration and the constant dyspnœa; the inspirations became very prolonged and the expiration correspondingly so, both were noisy and could be heard almost to the other end of the ward. The examination of the lungs remained negative. The spleen increased in size, its border was soft and round; the liver was slightly palpable. Otherwise physical examination was negative.

On the 20th day the patient was much worse, the jaundice greater with some cyanosis; respirations were of the same character, the inspirations again being very deep and accompanied by a groan. The patient became quite unconscious, not replying to questions. There was some tenderness over area of gall bladder and there seemed to be a little enlargement at this point. Radial pulse uncountable, heart beats, 21 to the quarter, respirations 25 to the minute. The blood at this time was quite negative for any foreign parasites, the leucocytes were markedly increased, the count being 25,000, many showing areas of fatty degen-

eration. The fresh blood under the microscope showed the presence in considerable numbers of long actively motile bacilli similar to the typhoid organisms. Cultures from the blood seemed to be negative, but tubes kept in the incubator for a number of days showed eventually an extremely aberrant form of the typhoid bacillus which after transplantation on to fresh culture media assumed its normal characters. The thrombus in the right leg had by this time practically disappeared.

The patient died on March 25th after a period of great restlessness and delirium. The jaundice greatly increased and a slight lateral nystagmus of the left eye developed.

During the stay of the patient in the hospital he had in all ten very profound rigors accompanied in all cases by a rise and then a sudden fall of temperature, pronounced sweating and constitutional disturbance. Besides these rigors he had almost daily attacks of chilliness and chilly sensations and at no time was he free from sweating, the skin being always moist and covered with a clammy perspiration. Cultures from this sweat failed to reveal the typhoid bacilli.

The autopsy was performed by Dr. MacCallum the day after death. The following anatomical diagnosis established. Typhoid fever with healing ulcers in the lower part of the small intestine ; an acute splenic tumour with a number of infarcts ; chronic aortic endocarditis ; chronic diffuse interstitial nephritis; slight broncho-pneumonia; adhesions between diaphragm, left lung and spleen and small sub-pial hæmorrhages in the left frontal region in the brain.

The lesions of the intestine were limited to the region of the ileo-cæcal valve where there were a dozen nearly healed ulcers with slightly indurated bases, the ulcers being quite characteristic of typhoid fever.

The spleen was large, soft and pulpy. On its removal from the body it crumbled to pieces and was eventually removed piecemeal. The liver was not enlarged. Gall bladder not distended.

There was no pigmentation of the brain or of the viscera, either abdominal or thoracic, no lesions at all characteristic of the fevers associated with the plasmodium of Laveran were found in any part of the body. The cultures at autopsy showed a general infection by the typhoid and colon bacillus, a staphylococcus peritonitis and pleuritis.

The autopsy findings in this case demonstrated that the clinical symptoms noted were due entirely to the lesions of typhoid fever, but it is rather difficult to explain the manner of association between the symptoms and the pathological changes.

The occurrence of chills in typhoid fever is usually ascribed to the complications or accidents of the disease, especially those graver and more serious complications like cerebral thrombosis and hæmorrhages, and intestinal perforation.

Johnson, of Washington, has recently called attention to cases of typhoid fever in which rigors were present both at the onset and in the course of the fever. The case here reported may be allied to such cases, but it presents as well a number of other interesting features. The rigors were in all instances very severe. The rise and fall of temperature was most abrupt, each fluctuation being accompanied by severe shaking chills and profuse sweating. In one instance the temperature fell in five minutes from 105.4 to 96.2, a drop of over 9 degrees.

Such pronounced rigors are seen only in two conditions practically malarial fever and septicæmia.

The presence of malaria was ruled out both by the constant failure to find the parasite in the blood and the lack of any lesions at autopsy associated with this disease.

We are thus forced to conclude that we were dealing with a case of typhoid fever in which *chills* marked the whole course of the disease or with a case of typhoid septicæmia.

It is quite probable that we were dealing with both. The patient constantly stated that his illness began with chills, fever and sweating and his treatment for malaria at this time testifies to the correctness of this statement. His symptoms while in the hospital were all characteristic of septicæmia and not of an ordinary attack of typhoid.

We should thus be led to conclude that the patient originally had a mild attack of typhoid fever with a few ulcers in the intestine.

The typhoid bacilli remained in the spleen and bladder, developing and multiplying and gave rise eventually to a condition of septicæmia with the typhoid and colon bacilli as the infecting agents. This general infection was the direct cause of death.

Aside from the chills, one's attention was called particularly to several other symptoms which were unusual in typhoid.

The Jaundice noticed on admission never totally disappeared. After death the body turned to a deep saffron yellow, as intense a grade of icterus being present as in obstructive jaundice. No obstruction to the flow of bile could be elicited at autopsy and no catarrh of the finer bile passages.

The jaundice was thus *hæmatogenous* in origin, belonging to that obscure group which is exciting so much attention from pathologists at present.

The Blood showed a normal white count at all times except during the rigors when the leucocytes rose to 25,000 and 30,000. This high leucocyte count was itself quite contrary to all observations on the blood of malarial patients and suggested the infectious origin of the chills.

The Pleurisy, the advent of which was *unassociated* with a rigor

persisted from the time of its appearance to the death of the patient. At autopsy there were plastic adhesions between the pleura, the lung and the diaphragm at the point where the pain was felt and the râles heard during life.

The Perspiration was most marked, quite as evident, indeed, as in the sudoral form of typhoid to which this case bears a little resemblance.

This sweat was highly acid in reaction, but contained no typhoid bacilli.

The Widal reaction was at all times positive, both in dilutions of 1—50 and 1—100.

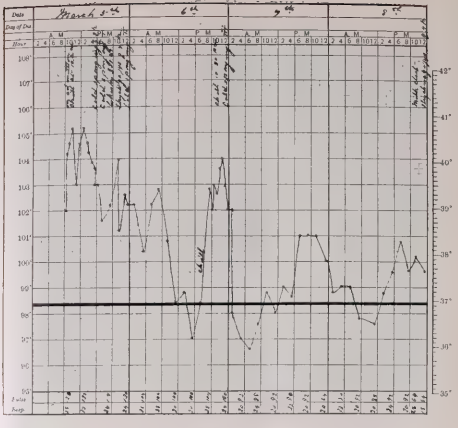
On admission the patient was suffering from cystitis. Cultures from the urine showed the typhoid bacillus, the presence of which in reality made the diagnosis of typhoid fever seem more probable.

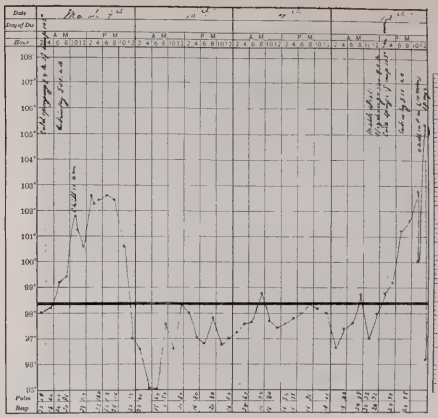
Young, of Baltimore, has called attention to the bladder complications in typhoid fever and has put on record several cases of typhoid cystitis. The cystitis in the present case has already been referred to by Gwynn, of Philadelphia. The typhoid bacilli never disappeared from this patient's urine, although their number was considerably diminished after the exhibition of urotropin.

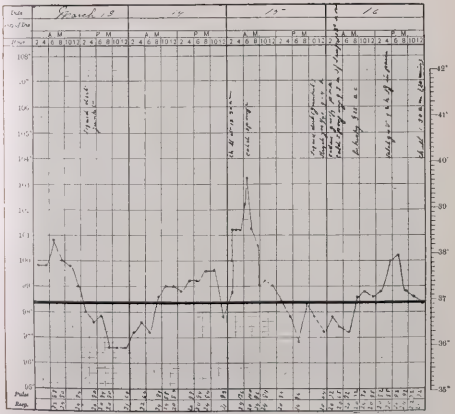
The Respiratory Distress was extreme for some hours before death. Dyspnœa was intense, pain in the chest severe, inspiration and expiration prolonged, the former, accompanied by a groan or grunt. This respiratory disturbance lasted for 48 hours before the fatal exit.

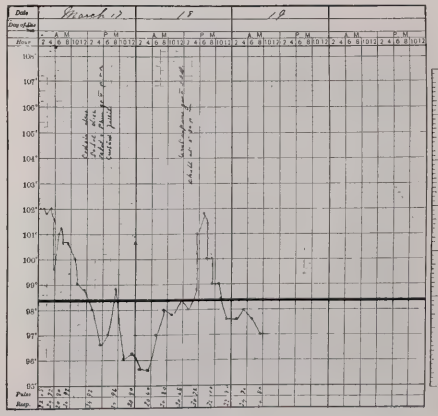
Fresh Specimens of Blood examined the last few hours before death revealed the presence in great numbers of long actively motile bacilli dodging about between the elements of the blood. Cultures from this blood at first seemed negative, but as I have stated, the transplantations made at this time, eventually gave colonies of an aberrant form of the typhoid bacillus.

Finally the Diagnosis of Typhoid Fever with Thrombosis, reached from the positive Widal reaction and the typhoid cystitis, and the diagnosis of septicæmia resting on the observation of bacteria in the circulating blood were both confirmed by the finding at autopsy of definite typhoid ulcers and by the blood cultures at this time which showed the typhoid and colon bacilli.









ON A MONSTER PRESENTING ANTERIOR DUPLICITY.

BY

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The Pathological Museum in McGill University has obtained from Dr. W. H. Macdonald, of Rose Bay, N.S., a very excellent example of the above malformation, and it has afforded to one of us (G. P. G.) the opportunity to make the accompanying skiagraphs showing well the underlying skeletal structure of such monstrosities. The history afforded by Dr. Macdonald is the following :—

His patient, a sickly woman, 21 years of age, was two months pregnant at the time of her marriage, and four months after this event was seized with pneumonia. The illness showed itself upon the Monday, and upon the Thursday of the same week she was seriously ill, having a temperature of 104°. That afternoon labor pains set in, but these were not strong till the Friday afternoon, when they became violent, and the patient was delivered of the fœtus; she was then so weak that stimulation with strychnine had to be employed. The membranes did not rupture until the os was fully dilated, and then the two heads came down together. Thinking this was a twin birth, Dr. Macdonald tried to push one head back, but could accomplish nothing. He then felt the small middle extremity, and discovered that the two heads were apparently continuous. The condition was so puzzling that he determined not to interfere for a time, then the pains becoming very strong, he was able to deliver the monster.

The fœtus showed no signs of life, and purposely he made no effort to restore it. There was an adherent placenta, and it was necessary to employ currettage; the ensuing hæmorrhage was slight, and the mother made a good recovery. The father was healthy, and but 20 years old. Dr. Macdonald could obtain no previous history of monsters occurring in the families, and the only unusual occurrence the patient remembered was a fright received three and a-half months previously, when she was in the cellar and a cat jumped near her. This clearly had nothing to do with the development of the monstrosity. The patient reckoned herself to be six and a-half months pregnant.

The accompanying illustrations render it unnecessary to give a full description of the fœtus. It will be seen from these that the fœtus is

well and symmetrically developed, possessing two completely separated heads with cutaneous fusion in the neck region; the outer arms of either fœtus are normal and relatively well developed, while there is an imperfect fused median extremity passing upward between the two heads. This median anterior extremity is formed of a single line of bones. As seen by the skiagraph, its axis is composed of a single series of five bones.

While externally there appears to be a single body, the skiagraph clearly demonstrates that here, as in double-headed monsters in general, there is a double vertebral column, even down to the coccyx.

The osseous development, as shown by the skiagraph, consists of ossific centres representing 24 vertebræ and 4 sacral segments on either side of median line forming two complete spinal columns, separated from end to end and diverging from below upwards. From the outer side of each of these spinal columns spring in their normal position twelve ribs extending round the thorax towards the front, but there is no sternum nor ossific centre representing one.

There is a clavicle and scapula in their normal place on the outer side right and left of these ribs, from which an arm is continuous, consisting of humerus, radius and ulna, 5 metacarpal bones, 2 phalanges for thumb and little finger, and three phalanges for each of the other fingers, on each side of the body. Below there is an ilium on either side, and an ossific centre for pubes on either side, a femur, tibia and fibula, one ossific centre for the os calcis, 5 metatarsal bones and 10 ossific centres representing phalanges constitute the skeleton of the leg on either side. Between the two spinal columns, and starting from their usual place in the column, are 12 pairs of rib bones, passing in towards the median line of the back of the specimen, and there united at an angle, —in the 5 lower ribs the point of union is downwards towards the pelvis, the remaining 7 pairs, except the first, have the point of union turned upwards towards the shoulder. The first pair is turned upwards, but not ossified as far as the point of union. The clavicles are here one for either side, and the scapulæ also, but these have scarcely been ossified to the region of contact. These bones support a single fleshy shoulder, whence springs a single arm represented by a single humerus extending upwards between the two heads; at the elbow this arm is bent upon itself towards the left head and down towards the shoulder, representing the forearm by one bone, in place of radius and ulna, at the end of which arm is again turned upwards, gradually ending in a point, in which the carpus, metacarpus, and phalanges are represented by 3 ossific centres. The cranial and facial bones represent about normal development at this early age.

The skiagraph in this case is taken stereoscopically, the two pictures

being taken from points 2½ inches apart, and when mounted in one way show the front view, and when reversed, the back view is seen. Full size pictures are in the museum of Medical Faculty, McGill College, for inspection.

So far as we know, this is the second recorded case of well-developed anterior duplicity occurring in Canada, and it may be well to recall the former, which was described by Dr. D. C. MacCallum, of this city, some 22 years ago (Obstet. Trans. London, Vol. XX., 1879, p. 120), and of which our museum possesses the original drawings by Hawksett. These children were born at St. Benoit, County of Two Mountains, on Feb. 28, 1879, and, as Dr. MacCallum informs me, they, or it, died in Sept. 1880, having lived for a period of 19 months.

It will be seen from the illustrations that the duplicity in this case was much greater than in ours, the external union occurring in the lower part of the thorax, the ribs throughout being distinct. It may indeed be laid down that the more complete the duplication the greater the chance of prolonged life in these monstrosities.

Here, as shown by the illustration of the posterior view, there were two pairs of anterior extremities, while the tail-like appearance about the nates was really a rudimentary median lower limb. This measured five inches in length, was provided with a point, and, like the anterior extremity in our specimen, tapered to a fine point, which was furnished with a definite nail.

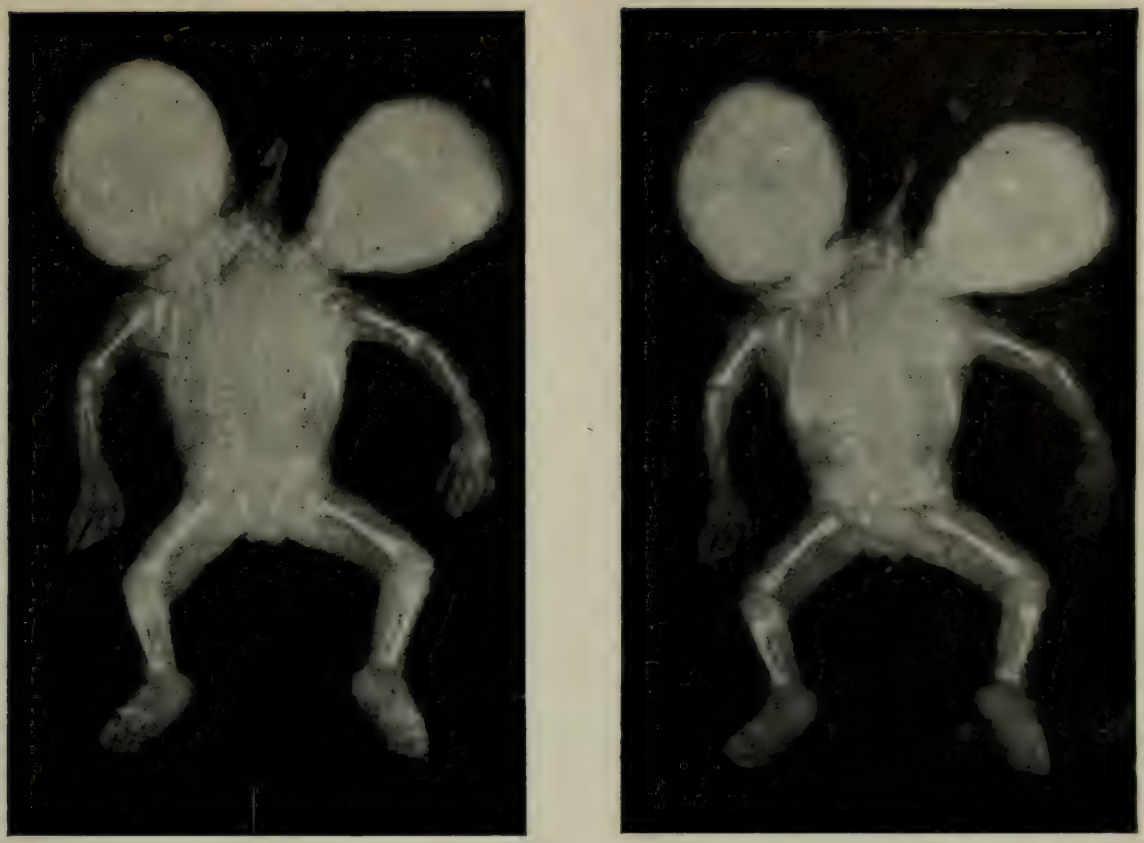
Dr. MacCallum notes in his description that the child to the left of the observer, named Marie, resembled the mother, had a fairer complexion and was of more strong development and healthier looking; the other, Rosa, the smaller, darker and more delicate looking, and resembled the father. The pulsations of the hearts did not correspond; Marie's heart beat at the time of examination 128 per minute, Rosa's 133; nor again were the respiratory movements synchronous. The sensation of hunger was not always felt at the same time; very frequently one child slept while the other was being nursed. When one child cried and the other was tranquil, the abdomen on the side of the crying child contracted and extended, and the limb on that side was agitated, the corresponding parts on the other side being at rest except for a slight and evidently communicated movement of the lateral half of the abdomen on the side of the quiet child; the same phenomena were observed when either child forced during a motion.

Clearly thus the spinal, circulatory, respiratory and digestive systems of the two children were distinct, the alimentary canal probably opening at a point close to the common anus.

Into the etiology of fœtal deduplication, a subject as involved as it is interesting, we will not enter, possibly one of us at a later period will

have more to say about it. We will only point out here that while, as Geoffroy St. Hilaire the elder pointed out long ago, it is possible that where two separate fœtuses develop from one ovum, fusion may eventually develop where the two bodies come into apposition, mere fusion cannot explain cases such as those here exhibited. When we consider that we may have the whole succession of forms from those in which there is simply a deduplication of the pineal gland, through cases in which the head is provided with a median eye and two lateral eyes, and cases of janiceps, such as that recently shewn before our Society by Dr. Macphail, through other stages represented by our present specimen and by Dr. MacCallum's case here produced—down to cases like the Siamese twins, in which the band joining the two otherwise completely separate individuals marks the site where a common umbilical cord entered the body, we can only conclude that in the very earliest stages of the development of the ovum, there may be a greater or less bifurcation of the head end of the ovum and the development of a Y-shaped medullary groove, so that in the hinder portion there is developed a single medullary groove with single sets of organs, and anteriorly the organs develop round two growing points.

The numerous experimental researches upon the fertilised ovum of lower animals made during the last few years, tend to prove that this is the case. In other words, such monstrosities must with the rarest possible exceptions be the product of not the fusion of two original separate ova, but of a single ovum which has undergone a division at its anterior pole.



Front View.

Back View.

STEREOSCOPIC VISION.

BY

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When looking around us, if we have good vision with both eyes, we see surrounding objects in their normal position as regards distance from us, and are able to say that one object is nearer than the other; but if we have only one eye, the other being blind or temporarily covered, the picture presented to us appears flat, and the relative distance of objects is not preserved to us. On investigating this phenomenon, we find that the two eyes are normally about 2½ inches apart from centre to centre, and that we converge the axis of the two eyes on different objects, and thus view the whole picture, the object converged upon being the prominent feature in the picture for the moment, and we really see two pictures, one with each eye, the central object of which is the object on which convergence is made, and that these two pictures are blended by means of the perceptive faculty of the brain, and we see only one picture. The two pictures as presented by the two eyes are not identical, and this may be readily shown by taking two pictures with a lens placed in two positions 2½ inches apart and comparing the two pictures. They will not be tracings one of the other, but the point of convergence will be the centre of each, and other objects will take their place accordingly. This will be easily proven if we place two objects in line with our nose, and alternately converge on the nearer object and the distant one.

If we converge the eyes on the distant object, it will be seen that there are two images of the near object visible, and in like manner, if we converge our eyes on the near object, two of the distant objects will be visible.

If now, whilst converging the eyes on the distant object, and the two images of the near object are both visible, one eye, say the right eye, be closed or covered, the left-hand image of the near object will be obliterated, and if the left eye be closed or covered, the right-hand image of the near object disappears. (Fig. 1.)

Again, if whilst converging the eyes on the near object two images of the distant object are visible, and if, whilst converging on the near object, and the two images of the distant object are visible, the right eye be closed or obscured, the right-hand image of the distant object disappears, and if the left eye, the image on the left disappears.

If now two objects be placed in line with the nose and the eyes con-

verged on the distant object, a card may be held up on the same line so as to obliterate the near object altogether, and the distant object remains visible as one object. (Fig. 1.) But if eyes are converged on near object, two images of the distant object will be seen, and if the right eye be closed or obscured, the right image of distant object will be obliterated, and if the left eye, the left image will be obliterated, and if two cards be gradually pushed in from outside towards the median line, both distant images can be obliterated whilst the near object remains visible. (Fig. 2.)

These experiments show that two distinct pictures are seen by the two different eyes, and that, therefore, to obtain true stereoscopic vision, two distinct pictures must be presented to the two eyes, the left to the left and the right to the right eye.

If, however, the pictures be reversed and the left picture put to the right eye, and the right picture to the left eye, the reverse effect is produced, and the distant object or portion of object appears near, instead of distant. In Foster's Physiology a drawing is given, from which the drawings produced are copied A. In this the foreshortening is given on the inside of the two pictures, and in B, I have reversed the sides; that is, I have put the right picture of A to the left eye in B, and the left eye picture of A to the right eye of B, and now they appear reversed in A. The object when viewed in the stereoscope appears as a solid truncated cone, whilst in B the effect of looking into a hollow truncated cone is produced.

On viewing any of these pictures with the stereoscope, they appear as if seen in relief or as solid objects, because the instrument gives to each eye its proper picture and the brain blends the two pictures into one.

It is quite possible, and most people with a little practice can see these pictures stereoscopically, the centres are placed $2\frac{1}{2}$ inches apart, and if held opposite their respective eyes, and the axis of the two eyes be made parallel, each eye will see its own picture, and the brain will blend them together. On looking at one of these pictures with the eyes parallel, that is, converged on infinity, three pictures will be seen, a central picture which appears solid, and a picture on either side which appears flat and wanting in solidity.

If whilst looking at one of these cards and seeing the three pictures, a card be passed up between the eyes, it will be found that the two outside pictures are cut off but the central one remains visible and appears solid.

If when looking at the card and the three pictures are visible, either eye be obscured, the centre solid object becomes flat and loses its rotundity and the third image on the side opposite to the obscured eye is lost.

If when looking at the card and the three pictures are visible, the card be altered in its horizontal level so as to raise one picture above the

other, the centre picture no longer appears solid, but is seen to consist of two images, which move as the level is altered.

From these experiments it is clear that when the card is looked at with the axis of the two eyes converging on infinity, in reality an image of each drawing is seen by each eye, so that in reality there are four pictures presented to the brain, but the two which are opposite to the respective eyes are blended into one solid object, by the brain, and the other two pictures are seen by the respective eyes to the inside of the picture which is opposite to the eye, and hence when the card is placed between the two eyes it is the two lateral pictures which are cut off, and the central solid object is still seen.

The practical use of these observations is that if a picture be taken stereoscopically and mounted so as to have left picture opposite left eye and right picture opposite right eye, the solidity will appear as correct from the point of view taken, but if the pictures be reversed, the view appears to be from the opposite side. And if the eyes can be practiced to look straight before them, that is, parallel axes or even a little divergent, and an object be placed before one eye and a blank sheet of paper before the other eye, it will be perfectly possible with a little practice to draw on the blank sheet with one eye what is seen with the other eye; hence it is possible to look down a microscope with the left eye and draw on a sheet of paper by the side of the microscope with the right eye what is seen by the left; and in like manner, if a mark be made on a piece of paper opposite the left eye, and looked at stereoscopically, that is with paralleled vision, a line can be drawn on the paper exactly under the line seen by the left eye which will be found to be $2\frac{1}{2}$ inches apart from the first line, a second and a third, or as many as are desired can be drawn equidistant.

In skiagraphy the advantage of these observations is that a picture may be taken stereoscopically, and by reversing the picture a view of both sides may be obtained as the parts, even the bones are so largely transparent.

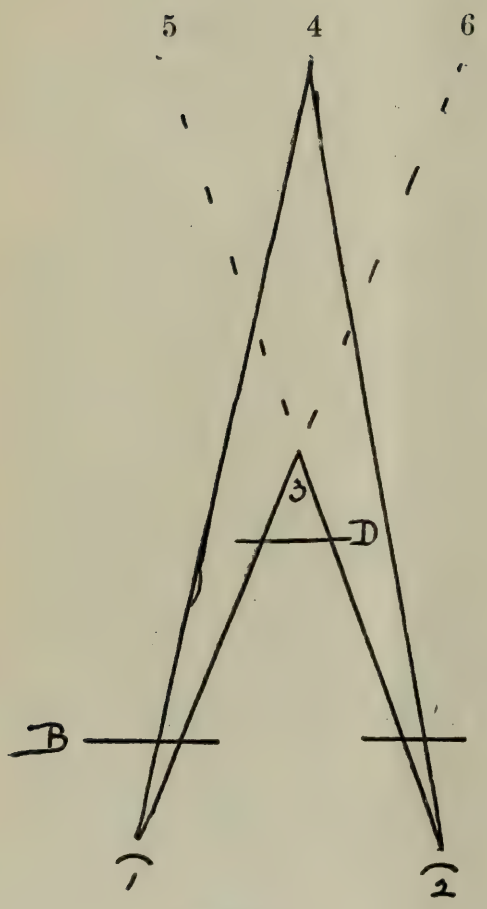


FIG. I.

1 and 2 are eyes, 2½ inches apart, 3 a near object, 4 a distant object in line with the nose, convergence of eyes on distant object 4, 2 images of near object are visible as at 5 and 6. Card placed at A cuts of 4 and 5 from 2, leaving 4 and 6 visible by 1, if card placed at B, 4 and 6 are cut off from 1, but 5 and 4 are visible. Card placed at D cuts off 5 and 6 but 4 is visible to both eyes.

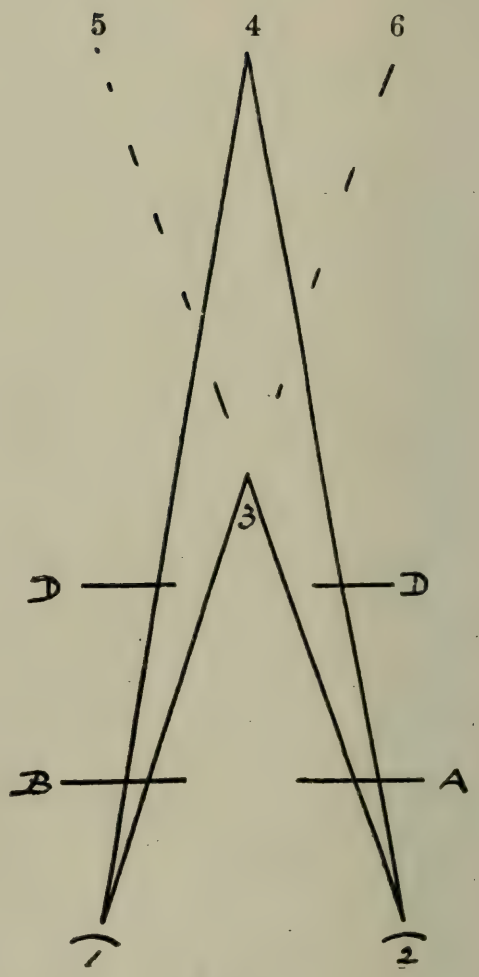
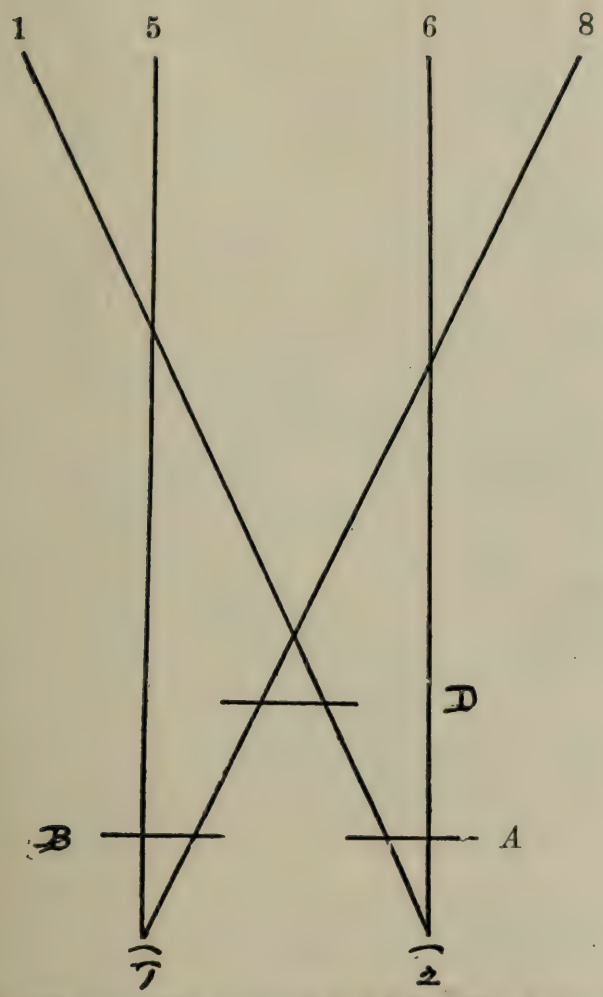
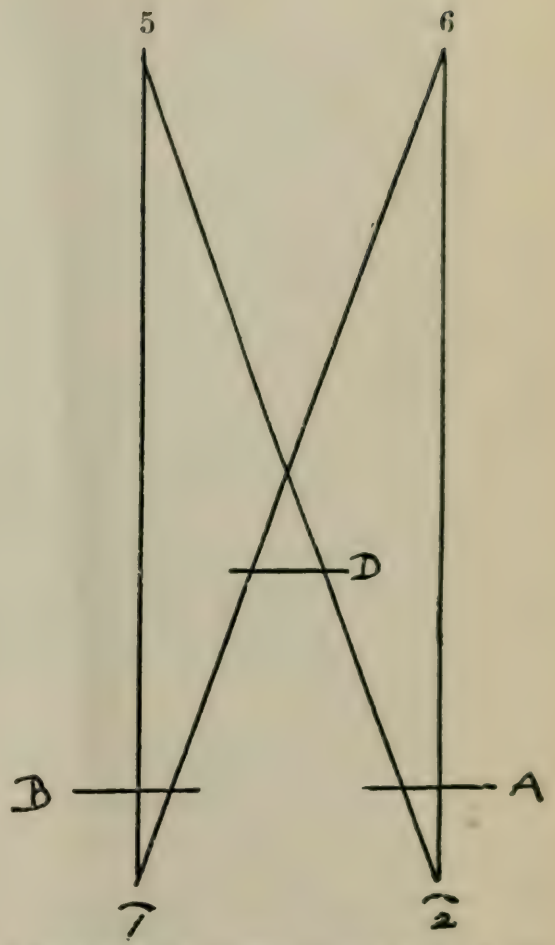


FIG. II.

1 and 2 are eyes, 2½ inches apart, 3 a near object, 4 a distant object in line with nose. Eyes converge on 3, two images of 4 are seen one on either side of 3. Card placed at A, 4 and 5 will be cut off from 2, if at B 4 and 6 will be cut off from 1, if 2 cards are held at D, 4 will be cut off from 2, or 4 will be cut off from 1, whilst 3 will be seen by both eyes.



1 sees 5 opposite to itself and 6 as at 8. 2 sees 6 opposite to itself and 5 as at 7. Brain puts 5 and 6 together in middle and solid. Card at A cuts off 6, making middle picture flat, and cuts off 5 as seen at 7. Card at B cuts off 5 making middle picture flat, and cuts off 6 as seen at 8. Card at D cuts off the images of 5 and 6 as seen at 7 and 8, whilst 5 and 6 are seen by 1 and 2 respectively and are seen as a solid object.



1 and 2 the two eyes, 5 and 6 the two pictures opposite the eyes. 1 sees 5 opposite to it and also sees 6 to the inside or right side of it. 2 sees 6 opposite to it and also sees 5 to the inside or left side of it. The Brain puts 5 and 6 together solid and in the middle, 5 is seen by 2 to the left of the conjoined figure and 6 is seen by 1 similarly to the right of conjoined picture. Card at A cuts off 6 and 5 from 2, at B cuts of 5 and 6 from 1. At D cuts off side pictures of 5 and 6 from opposite eyes 2 and 1, but 5 and 6 are seen solid around the edges of cord.

THE SEGMENTATION OF THE HEAD.

BY

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Of the many great problems of animal morphology and anatomy, none at all times have proved of such interest as that of the segmentation of the head.

Of how many segments is the head composed ?

Since the time of the celebrated French naturalist, Savigny, we have all acknowledged the contentions he so clearly enforced regarding the nature of segmentation. We see plainly how the body of a vertebrate is made up of segments which obey Savigny's law just as correctly as do those of a lobster, grasshopper, or a worm.

Is not the head simply the modified anterior end of the body and as such similarly segmentally constructed ? This was the question which confronted the early morphologists of this century.

The honor and the merit of being the first to offer a solution of this question has had, like all great discoveries, numerous claimants among which I may briefly mention Vicq d'Azyr, Burdin, Heilmeyer, Goethe, and Oken.

It is not the purpose here to examine or endeavour to settle in any way the relative merits of these various claimants, further than to select, by way of commencement, Oken's graphic account of his discovery of it.

One day in the autumn of 1806, he was rambling through that beautiful Harz forest, the birthplace of so many mythical and romantic ideas, when he accidently struck his foot against something half buried in the fallen leaves. On examination he found it was the broken skull of a sheep. It was broken either by accident or decay in such a peculiar fashion as to present the appearance of being made up of a series of bony rings or segments.

Turning it over with his foot as it lay among the leaves, the idea suddenly flashed across his mind that the skull was nothing more or less than a series of bony rings representing modified vertebræ. He tells us with what haste and anxiety he hurried home to apply and work out this thought. The following year being chosen professor extraordinary in the university at Jena, he took as the subject of his address, "The significance of the cranial bones." Here, in full, he stated his views for concluding that the skull is composed of three modified vertebrae, "the eye," "the jaw" and "the tongue" vertebræ, as he named

them. Each head vertebra similar to a trunk vertebra consisted in his opinion of several parts,—a body, two arch pieces, and a dorsal spine. He believed this composition was most easily recognizable in the last cranial vertebra or occipital bone; here the basal part was comparable to the centrum or body of the vertebra, the condyloid parts to the lateral arches, the superior part to the vertebral spine. The second cranial vertebra was to be discerned in the body of the posterior portion of the sphenoid bone, which together with its greater wings and the two parietals, forms the second bony ring around the brain. The third cranial vertebra was constructed out of the anterior part of the sphenoid bone, together with its lesser wings and the two frontals. Any bones which he found would not fit in with this scheme, he discarded as of no

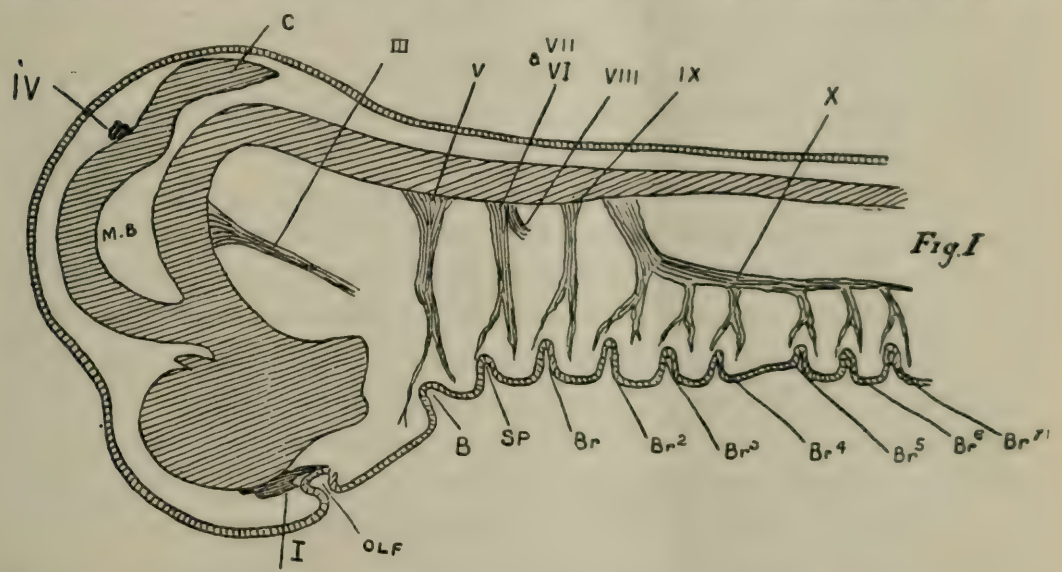

Fig. I. A diagrammatic view of the head of a young vertebrate embryo from the left side, showing the several segmental nerves and their relations to the visceral clefts. (Modified after Milnes Marshall.)

I., II., III., &c.—Cranial nerves.
B.—Mouth.
Br¹—Br⁷.—Gill slits.
Sp.—Spiracle.
Olf—Olfactory pit or cleft.
M.B.—Mid-brain.
C.—Cerebellum.

importance, in part to be associated with the organs of special sense as sensory bones in part comparable with the ribs of the thorax.

Oken's views became universally popular. Diagrams showing his manner of regarding the origin of the head bones were in every text book, and frequently in our museums to-day we run across collections of skulls divided into these three vertebræ, which have been handed down from the lecture room of Oken's time, attesting not only the former popularity of his theory, but also its original genius. In fact, any anatomist of those times who wished to be considered as amounting to anything, had to publish his particular version of the matter.

So Bojanus and Richard Owen regarded the skull as formed of four

vertebræ; McClise as formed of six; Geoffroy St. Hilaire as formed of seven, while Spix, Meckel, Burdach, Carus and Johannes Mueller agreed with Oken in considering it as formed of three modified vertebræ. Even so late as 1870, Stieda published a paper in the celebrated "*Zeitschrift fur wissenschaftlichen Zoologie*," in which he accepts Oken's theory of the skull.

But comparative anatomy could never satisfactorily point out which bones were to be regarded as modified parts of vertebræ and which were not. With increasing knowledge and insight, Oken's views came gradually to be abandoned as erroneous and defective. In the work of the anatomist Stannius, this problem of the head enters a new phase.

Stannius brought the visceral or branchial skeleton into the problem, and said the segments of the head were not so much to be explained by the bones of the head and the cranial nerves, as by the *visceral arches* or gill clefts. Before this the anatomists of the Oken school had all tried to reduce the cranial nerves in such a manner as to make them come off from the three or four vertebral segments, into which they regarded the skull as divided, in a manner similar to the manner in which the spinal nerves come off from their respective vertebræ This led them into all sorts of difficulties. For instance, Stieda, whose paper I have just mentioned, following Oken in regarding the head as formed of three segments, had trouble in bringing his sixth or abducent nerve into proper order ; do what he would, it did not fit in right with the other nerves. It never seems to have occurred to him that in trying to arrange the 12 cranial nerves to come off properly from these three head vertebræ, he was as it were forcing matters. To straighten out things he simply regarded the abducent nerve as a branch of the trigeminal or fifth. This, perhaps, was not so bad, but when he went on to regard the motor ocular (third), the trochlear (fourth), the abducent (or sixth), and the great facial (or seventh), as all branches of trigeminal or fifth, whose present separate origin from the brain was a matter of no importance, merely a secondary acquired feature, we realize the bad and very unscientific influence this Oken theory was exerting upon anatomy.

Stannius, in concluding his great treatise on the peripheral nervous system of the bony fishes with the following words : "Hence it "follows that the number of the vertebral branches of each cranial "nerve and the number of spinal like (segmental) cranial nerves is not "to be determined so much by the number of skull vertebræ, as by that "of the visceral arches,"—conferred on modern anatomy one of the greatest blessings, in paving the way in the right direction for greater discoveries. "If he had but gone one step further, had he been able to completely disabuse his mind of this notion of the skull vertebræ, which had already caused so much error, he would have anticipated by

more than 20 years Gegenbaur's great announcement of that theory of the vertebral skull, which has since, with some slight modifications, been almost universally accepted."

The Oken theory, however, lived on to receive its final death-blow at the hands of Professor Huxley in his Croonian lecture before the Royal Society in 1858.

Here Huxley pointed out that the problem really includes two separate and distinct questions :—" First are all vertebrate skulls constructed on the same plan ? Secondly, is such a plan supposing it to exist identical with that of the vertebral column ?" The fact that the skulls of all vertebrates are constructed on the same plan by no means affirms that it is in any way formed from modified vertebræ. Huxley attacked the problem from a double stand point, first by a careful comparison of the various anatomical features presented by typical vertebrate skulls, he came to the conclusion that there is a common plan of construction to be discerned in these skulls, second by studying the development and earliest embryological appearance of the bones composing the skull, he found that in no possible manner could these be regarded as derived from modified vertebræ, except that in their earliest beginning they both start from the same primitive condition—a common central plate with its dorsal and ventral laminæ ;—whence they immediately diverge more and more as development proceeds.

"The spinal column in all cases becomes segmented into somatomes ; and in the great majority of cases, distinct centra and inter centra are developed, enclosing the notochord more or less completely.

The cranium never becomes segmented into somatomes ; distinct centra and inter centra, like those of the spinal column, are never developed in it. Much of the basis cranii lies beyond the notochord.

In the process of ossification there is a certain analogy between the spinal column and the cranium, but the analogy becomes weaker and weaker as we proceed towards the anterior end of the skull.

Thus it may right to say, that there is a primitive identity of structure between the spinal or vertebral column and the skull ; it is no more true that the adult skull is a modified vertebral column, than it would be to affirm that the vertebral column is a modified skull."

It is interesting to note that the facts upon which Huxley laid stress in 1858 as arguments against the vertebral origin of the skull have become with the advance of embryological science at the present day our strongest arguments in favour of it, though in a somewhat different sense. For we now know that there is a primitive segmentation of the cranium similar if not identical with that of the spinal column. But we have also found that this segmentation has little or nothing to do with the formation and ultimate arrangement of the bony elements either

in the head or the spinal column. In fact structures so late in phylogenetic appearance as the bony elements could not be expected in Huxley's opinion to furnish evidence of sufficient value to be of any use in determining the primitive condition in which the head might have been segmented. Huxley's arguments proved conclusive and from this on we hear no more of the "vertebral archetype" or the system of mystical and transcendental anatomy so popular in the early part of the century.

In 1871 appeared Gegenbaur's great work which has formed the foundation of all subsequent work. As Huxley's work had as its object the destruction of the main contentions of the Oken school, having accomplished this he went no further. It remained then only for Gegenbaur to put the finishing touches on what Huxley had done, completely reversing the order of procedure of the Oken school; setting to work by taking the visceral arches and nerves and determining from them the number of head segments, so replacing the old vertebral theory of the skull, demolished by Huxley with the modern theory of the segmentation of the head. And although Huxley had outlined this procedure before him, somehow or other the whole credit has been given to Gegenbaur. In fact, Gegenbaur in this paper advanced hardly anything which is not also to be found in Stannius or Huxley, except an attempt to rank the labial cartilages of sharks as gill arches, a theory which now, hardly holds water. He also pointed out, that, from the fact that the vagus or tenth nerve supplies more than one gill arch (in fact in the form he studied, it supplied five gill arches) we were, therefore, to conclude that the vagus represented a fusion of a number of primitively distinct nerves, a result which has since been confirmed from many independent sources, but the gist of this is, perhaps, to be found in Stannius. Probably the greatest good done by Gegenbaur was his pointing out that if the Oken theory of the vertebral origin of the head bones were true, then in the very lowest fishes we should naturally expect to find the most simple conditions of affairs,—on the contrary in these fishes we find the cranium actually a solid case from end to end without the faintest traces of segmentation into vertebræ. Further, that in the higher vertebrates, even in the embryo, the basis of the skull is laid down in a perfectly unsegmented and continuous sheet of cartilage, which becomes folded up around the brain vesicles gradually enclosing them and the organs of special sense, completing a primary skull perfectly unsegmented; that after this a secondary skull is formed outside this primary cartilaginous skull, by the sinking in of dermal bones or scales from the surface of the skin; that, after this secondary skull is formed, parts of the primary cartilaginous skull are absorbed, the unabsorbed parts becoming ossified and fusing with the secondary or dermal skull. So the second-

ary skull, with what remains of the primitive skull which has become ossified, constitutes the actual skull of the adult. It remained only for Gegenbaur's celebrated pupil, Froriep, to add that in the Mammals at least, the skull has gradually increased in size at the expense of the neck by the absorption of true vertebræ corresponding to the segments of which the hypoglossus represents the nerve. To this day we have nothing further to add so far as the bony skull is concerned.

Below is a table taken from Gegenbaur's paper regarding the segmentation of the head as summarized by him. You will see that he only takes into consideration as of segmental value four of the cranial nerves, leaving out the olfactory, the optic, and the eye muscle nerves, also the auditory, and the eleventh and twelfth ; you will see he distinguishes in all, nine head segments.

TABLE OF HEAD SEGMENTS ACCORDING TO GEGENBAUR.

Primary Visceral Skeleton.	Modified Visceral Skeleton.	Nerve.
1st Arch.	First Upper Labial Cartilage.	Trigeminus Ramus 2.
2nd Arch.	2nd Upper and 1st Lower Labial Cartilage.	" " 3.
3rd Arch.	Mandibular Arch.	Facial.
4th Arch.	Hyoid Arch.	Glossopharyngeal.
5th Arch.	1st Gill Arch.	Vagus Ramus 1.
6th Arch.	2nd "	" " .2
7th Arch.	3rd "	" " 3.
8th Branch.	4th "	" " 4.
9th Arch.	5th "	

After Gegenbaur's time the bones of the head ceased to play any part in the solution of the problem. If I may follow Froriep in dividing the history of the subject into three phases, of which Oken's theory forms the first phase, then Huxley's and Gegenbaur's works will complete the second phase. We enter the third phase, which is that of the present day, with the work of Balfour, Marshall, Beard, Goette, Van Wijhe and Froriep. Here two new elements make their appearance. Balfour was the first to point out that the primitive body cavity extends up into the region of the head, there becoming segmented into a series of pockets, one for each segment, similar to its segmentation into

pockets in the segments of the trunk. This forms an important point of agreement between head and trunk; thus the head becomes similarly segmented to the trunk at a time when the first traces of a vertebral column, or head skeleton, have not yet made their appearance, and even before the medullary groove has closed.

Again Balfour made the interesting discovery that the dorsal or sensory roots of the spinal nerves develop from a ridge of epiblast cells constricted off from each lip of the closing medullary groove forming a ridge on each side of the medullary canal. When the medullary groove becomes closed, these two ridges fuse with one another in the median line forming a continuous plate. To this plate of epiblast cells the name of Neural Crest was applied. The dorsal spinal nerve roots form from the growing out of buds at fixed intervals along this neural crest. These buds migrate down the lateral walls of the medullary canal until they reach a position about on a level with the notochord, then they lose their connection with the neural crest and become free as the rudiments of the dorsal spinal nerve ganglia; later they form connections with the spinal cord and ventral spinal nerve roots and the peripheral parts of the body, which they innervate by sending out processes, which grow out among the tissues till they reach their proper endings, and also back into the spinal cord. This neural crest extends up into the region of the head ; there some of the cranial nerves develop from it in a manner similar to the way in which the regular nerves of the trunk do ; appearing first as small buds which push down the sides of the primitive brain vesicles, losing their dorsal connection with these vesicles, becoming free, later taking up a ventral connection with the brain vesicles again. On the other hand some of the cranial nerves develop just like the ventral or motor roots of the spinal nerves, as simple outgrowths of the ventral wall of medullary canal.

These two discoveries, as I have already remarked, give us two new factors by means of which we can compare a trunk with a head segment. It is obvious that if we have a segmentation of the mesoderm of the head, similar to the segmentation of the mesoderm of the trunk, and if the nerves of the head region develop in a manner similar to the nerves of the trunk region, we have so much the more reason for regarding a head segment as the equivalent to that of a trunk segment.

Farther, that, as the segmentation of the mesoderm into these primitive segments occurs at a stage long before the appearance of any actual skeleton, we have in them an index to segmentation far more valuable than any gill slits, cranial nerves, or bones could be. Moreover, these primitive mesodermic or muscle segments (for it must be remembered that it is in relation with these segments that all the muscles of the body arise) determine the segmental distribution of the peripheral

nerves. For the motor nerves, supplying the muscles of the segment to which they run, unite to form an anterior or ventral root as they emerge from the spinal cord, and the sensory nerves, running to supply the skin of the same segment, unite in a similar manner to form a sensory or dorsal root; the ventral and dorsal roots uniting in higher forms, to form the complete spinal nerve, although in Accipenser and Petromyzon and others, they still retain their primitive nature and remain throughout life as distinct and separate nerve trunks.

So with Balfour the index of cephalic segmentation is to be found in the cavities which exist in the middle of these primitive segments or myotomes, which as I have already said, are simple prolongations from the original body cavity. So by counting up the cavities of the head or head cavities, he hoped to be able to arrive at the correct number of segments which had primitively entered into its composition. As Balfour's untimely death occurred in 1882, so putting an end to the full elaboration of his work, and as his pupil, Milnes Marshall, took up and further worked out his ideas, I shall simply state Marshall's results, saying that Balfour recognized at least 8 segments in the head, Marshall starts out by formulating the characteristics which a segmental nerve should have in order to be of any value as an index to the number of head segments. These are: 1st. It should develop as an outgrowth of the neural crest.

2nd. Its point of attachment should change with the progress of development, from the neural crest to the ventral side of the brain.

3rd. The general course of the nerve should be at right angles to the axis of the brain; a segmental nerve should not transversely cross several segments.

4th. The nerve should show a relation to a visceral arch, and also to a head cavity.

5th. A segmental nerve very constantly presents a ganglionic enlargement near its origin from the brain.

He then proceeds to apply these five tests to each of the cranial nerves in turn, starting first with the olfactory.

Now up to Marshall's time the olfactory nerve had been regarded as a prolongation of the brain and for this reason Stannius, and Gegenbaur had left it out of account in their dealings with the subject, but Marshall very correctly points out that in its development it really arises like all the other nerves of the head. Arising from the neural crest, its origin becomes shifted down to the ventral side of the brain, and in its primitive condition it really runs at right angles in the segment to which it belongs; it being only by the unequal growth of certain parts of the head that it comes finally to run, as in the case of amphibians in the long axis of the brain. It splits up to embrace the

olfactory organs just as any of the vagus branches split up to embrace their respective gill clefts, so he concludes that the "olfactory organ is the most anterior visceral cleft ; that the olfactory nerve is a segmental nerve supplying the two sides of that cleft in a manner precisely similar to that in which the hinder clefts are supplied by their respective nerves, and that the Schneiderian folds of the olfactory organ are the homologues of gills."

The only trouble with this is, as has been so often pointed out and first by Marshall himself, that the olfactory organ or nasal pit is derived as a sinking in of the epiblast, while the gills or visceral clefts are derived as evaginations from the hypoblast of the alimentary canal,—so forcing him to compare as similar and homologous structures organs developed from separate and distinct embryological fundaments.

TABLE OF HEAD SEGMENTS ACCORDING TO MARSHALL.

Segment.	Nerve.	Visceral Cleft.	Visceral Arch.
1. Preoral.	I. Olfactory.	Olfactory.	
2. Preoral.	III. Oculomotor. IV. Trochlearis.	Lachrymal.	Maxillary.
3. Oral.	V. Trigeminal.	Buccal.	Mandibular.
4. Postoral.	VII. Facial. VI. Abducens.	Spiracular.	Hyoid.
5. Postoral.	IX. Glossopharyngeal.	1st Branchial.	1st Branchial.
6. Postoral.	X. Vagus 1st Branch.	2nd "	2nd "
7. Postoral.	X. " 2nd "	3rd "	3rd "
8. Postoral.	X. " 3rd "	4th "	4th "
9. Postoral.	X. " 4th "	5th "	5th "
10. Postoral.	X. " 5th "	6th "	6th "
11. Postoral.	X. " 6th "	7th "	

I have drawn Marshall's conclusions in tabular form as he expressed them that you may make out these various relations, and you will see that he gets eleven segments altogether; this is due to his considering sharks like Heptanchus with seven gill slits, as the most primitive form

thus gaining two extra segments behind the ear. In front of the ear he has the same number of segments, practically, as Gegenbaur.

You will see that of the twelve cranial nerves he leaves out of account four—the optic, regarding it as part of the brain, the auditory, which he regards as part of the seventh and so not entering into the scheme, the spinal-accessory and hypoglossal, not being constant as cranial nerves, he holds are so not worthy of consideration.

A little later in the year in which Marshall's paper was published, appeared a paper by the Dutch investigator, Van Wijhe, which has received more attention and has been more frequently discussed than any of the numerous publications on this subject. Van Wijhe makes head cavities the basis of his work and tries to show the morphological comparability of a trunk segment with a head segment in a manner much more thorough than either Balfour or Marshall had done before him.

Although, as I have stated, Balfour first discovered these head cavities and recognized their segmental value, he did not study them further than to determine the presence of a premandibular, a mandibular, a hyoidean, and several branchial cavities. He determined that there is at first a simple undivided prolongation of the primitive body cavity of the trunk into the head region, reaching as far forward as the optic vesicles. This cavity then becomes divided into two parts by a constriction caused by the developing spiracular gill slits. The anterior part then divides into two parts by constriction, along the line of the developing mouth, the posterior part being divided in turn by the successively developing gill slits, so forming a series of separate cavities, one for each gill bar. These separate pockets are in communication with one another over the tops of their respective gill slits, though separated from one another ventrally, then later, they become completely separated from one another; the dorsal parts, which were originally in communication with one another, become in addition separate from the ventral parts in the first three of these cavities.

Marshall, going further, thought that the dorsal parts which became distinct from the ventral parts in the case of the first two cavities, were to be compared with the regular trunk somites, minus their ventral or hypomere portion, because he claimed to be able to trace the origin of the eye muscles to the dorsal parts of the these cavities, and as the muscles of a trunk somite are developed from the dorsal portion of a trunk somite, minus its ventral portion or hypomere, he claimed on these grounds the homology was complete between these respective parts of the trunk and head somite. It did not occur to him that it was possible in any way to compare these series of ventral cavities with the one great ventral cavity of the trunk somites with which the dorsal cavities of the trunk somites all communicate.

It remained only for Van Wijhe to confirm Marshall's account of the origin of these head cavities, and to show that, if it were not for the presence of gill slits in the head region, we would have the same condition of affairs in the head region as we have in the trunk region; that is, these ventral cavities are strictly homologous with the one great ventral cavity of the trunk somites.

Van Wijhe also confirmed Marshall's statement regarding the origin of the eye muscles from the three first of these head cavities (that is their dorsal parts) although in their exact origin he found some slight differences from Marshall's account.

HEAD SEGMENTS ACCORDING TO VAN WIJHE.

Somite.	Muscles from the Somite.	Ventral Nerve Root.	Dorsal Nerve Root.
1.	Rect. sup. inf. int. and inf. Oblique.	Oculomotor.	Ophthalmicus profundus.
2.	Superior Oblique.	Trochlearis.	Trigeminus less Opth. prof.
3.	Rectus Externus.	Abducens.	Acusticofacialis.
4.	None.	None.	
5.	None.	None.	Glossopharyngeal.
6.	Very rudimentary.	Not recognizable.	Vagus.
7. 8. 9.	Muscles from skull to shoulder girdle with anterior part of sterno-hyoid	Hypoglossus.	

From the first pair of cavities, which are premandibular in position, he finds the rectus superior, inferior, and inferior oblique muscles are developed, all innervated by the motor ocular nerve (III).

From the second cavity, which is situated above the mandibular arch, sending a branch of its cavity into it, is developed the superior oblique innervated by the trochlear (IV).

From the third cavity situated above the hyoid, is developed the external rectus innervated by the abducent nerve (VI).

The fourth cavity is partly also in the hyoid arch. From this fact that he gets two cavities in relation with the hyoid arch; he considers it as really double.

The remaining cavities follow one another in regular order, only interrupted by the auditory organ; the fifth and the sixth produce a

few small muscle strands, while the seventh and eighth and ninth unite to form the ventral prolongation of the sterno-hyoid muscle. So Van Wijhe regards the head as formed of nine segments, and he goes farther than those before him in attempting to develop a ventral and a dorsal nerve root in conjunction with each of his segments.

In the decade and a half which has elapsed since Van Wijhe wrote his famous paper, an innumerable number of attempts have been made to add further to his discoveries.

Miss Platt, one of our American investigators has discovered what is undoubtedly a head cavity more anterior still to Van Wijhe's first or premandibular cavity. She claims that it develops as in evagination of the primitive mouth or archenteron of the embryo, she claims also that Van Wijhe's first and second cavity develop likewise.

This places the problem in an entirely different light, and the question becomes whether these structures represent dorsal diverticula of the mesoderm, or lateral diverticula from the alimentary canal, whether they are of mesoblastic or of hypoblastic origin. If they are proved to be diverticula of the alimentary canal and so of hypoblastic origin, it is impossible to institute any homology between these preotic cavities and those of the postotic and trunk region.

As time has gone on every shade of opinion has been expressed regarding the nature and the number of these cavities. Their very existence has been denied, reaffirmed and denied again, and if this great divergence of opinion among the followers of Van Wijhe stands for anything, then it is that the question is far from being settled now as then.

To the researches of Froriep and Beard, we owe the discovery of what Beard has called the " suprabranchial sense organs " or sense organs of the lateral line.

Beard has discovered that a cranial segmental nerve develops in the following manner:—It first arises from the neural crest, then grows downward till on a level with the top of the gill cleft, above which it fuses with the external epiblast, a thickening of the epiblast occurring at this point of fusion, which subsequently gives rise to the ganglion of the nerve, from which a branch is sent up dorsally, while the main stem of the nerve grows down splitting up to supply both margins of the gill slit.

He endeavours to prove that all the cranial nerves except the optic, develop in this manner ; the main point being the development of the nerve from the neural crest in relation with this epiblastic thickening or sense organ.

Formerly Beard spoke of these organs as "segmental sense organs" and as so distributed throughout the body, but now he wishes us to consider them, although segmentally arranged, as having always been limited to the gill region.

Among the noteworthy features of his results is his recognition of the olfactory as a segmental nerve, though on different grounds from those upon which Marshall had so considered it, for he regards the olfactory organ as nothing more or less than a much modified suprabranchial sense organ.

HEAD SEGMENTS ACCORDING TO BEARD.

Segment.	Dorsal Nerve Root.	Branchial Cleft.	Nature of Sensory Organ of Cleft.	Ganglion.	Head Cavity.	Ventral Nerve Root.
I.	Olfactory.	None.	Olfactory Organ.	Olfactory.	None.	None.
II.	Radix longa of Ciliary ganglion.	None or Hypophysis.	Branchial.	Ciliary.	First.	Oculo-motor.
III.	Trigiminus.	Mouth.	Branchial.	Gasserian.	2nd.	Trochlear.
IV.	Facial.	Absent.	"	Facial.	Third.	Abducens
V.		Branchial			?	None.
VI.	Auditory.	None.	Auditory Organ.	Auditory.	None.	None.
VII.	Glossopharyngeal.	1 Branchial	Branchial.	Glosso-pharyngeal.	?	None.
VIII.	Vagus I.	2 "	"	Vagus I.	None.	None.
IX.	" II.	3 "	"	" II.	None.	None.
X.	" III.	4 "	"	" III.		
XI.	" IV.	5 "	"	" IV.		

The facial is regarded as a compound nerve, and the auditory as segmental, because it supplies the ear which, like the nose, he places in the same category of a much modified suprabranchial sense organ. Naturally, if these sense organs are to be limited to the gill region, as Beard claims they are, they cannot afford any common basis for the comparison of cranial with spinal nerves.

For if the cranial nerves develop in definite relations in regard to these sense organs, then these sense organs being wanting in the trunk region, it only adds to the differences in development of these two sets of nerves. This leads Beard to regard a typical head segment as different from a typical trunk segment, and the two structures to be entirely of different origin. But although he makes this difference between head and trunk, he still hopes to determine the correct number of segments composing the head, by counting up the number of

sense organs along the side of the head which were primitively situated one over each gill cleft. Beard in concluding his paper expressed it as his opinion that "experimental evidence of the real nature of these sense organs will be shortly forthcoming, and that here a valuable field of research is open for the physiologist." But time has not borne him out in this, for we are as far from knowing anything of their real physiololgy now as 45 years ago, when Leydig first discovered them; he pointed out that they were sense organs and there the matter has remained ever since.

Hoffmann in following out the development of the cranial nerves of Acanthias, one of the dogfish tribe, has made the discovery that in this interesting form, which is evidently archaic in this respect, the cranial nerves and also the dorsal roots of the spinal nerves do not develop from the neural crest, but from paired hollow segmental evaginations of the dorsal wall of the medullary canal itself.

These hollow evaginations grow out on either side of the head to reach the skin, fusing with it and forming a thickening at the point of fusion. This thickening represents the primitive nerve ganglia; a nerve is then budded out from this primitive ganglia, which grows back to the brain or spinal cord and which becomes the permanent nerve, the first or primitive nerve having entirely disappeared.

The importance of this discovery is at once recognized when we reflect that this is the manner exactly in which the optic nerve and the eye develop; for the bulb of the eye represents one of these modified nerve ganglia. For the researches of Assheton, Froriep, Keibal and Spencer have long ago shown that the optic nerve develops as a hollow outgrowth from the brain, which growing out meets with a depression in the skin called the optic pit, with which it fuses; it then loses its connection with the brain by the absorption of the connecting nerve, the distal free portion, developing the retina, sends out a process which grows into the brain again, forming the permanent optic nerve.

Some six years ago Ramon y Cajal, in investigating the structure of the retina by means of his celebrated Golgi method, came across peculiar nerve cells, the like of which were only to be found in certain parts of the brain, in fact, they were readily recognizable as brain cells. He concluded, therefore, and everybody else agreed with him, that this discovery settled beyond all doubt the opinion that the optic nerve and the retina are simply parts of the brain and so to be kept distinct from the other nerves.

You have seen how Gegenbaur, Balfour, Marshall, and Van Wijhe, had all left the optic nerve out of account in their considerations of the segmental cranial nerves, but this discovery of Hoffmann's makes it impossible for us to escape from the conclusion that the optic

nerve is anything other than a segmental cranial nerve, and it finally falls into place the last of the cranial nerves to succumb after a long and desperate struggle to be considered a modified brain lobe.

Hoffmann's study of the number of segments in the head correspond closely with that of Van Wijhe, except that he finds a rudiment of one of these skin ganglia posterior to Van Wijhe's ninth segment; he considers this evidence of an additional segment, giving him 10 segments in all, he finds the same nerve relations with regard to the other segments as Van Wijhe.

A year or so previous to Beard's paper, Alhborn published a paper in which he claimed there were two distinct kinds of segmentation to be distinguished in the head, one of the segmentation of the mesoderm into head cavities or somites and to which he applied the term "mesomerism;" the other the segmentation of the gill slits or branchial bars, to which he applied the term "branchomerism." Alhborn claimed that these two kinds of segmentation did not correspond with one another, that is, the segments of the mesoderm bear no relation to the position of the gill slits or branchial segments. But this was very soon shown to be wrong and that mesomerism did really correspond with branchiomerism, although in some forms the relations of the two are not plain. This paper of Alhborn's was soon lost sight of and attracted very little attention at the time of its publication, but the late studies of Béraneck, Orr, Waters, Zimmermann, McClure, Locy, Küppfer and others, have brought it into prominence again and have shown it contains the germ from which greater things have developed.

For the investigations of these men have proved that in the embryos of all classes of vertebrates the central nervous system shows at a very early stage a series of constrictions and dilations, extending throughout the length of the neural tube, giving it a segmented or beaded appearance. This beaded condition of the neural tube they consider to be a third kind of segmentation to which they have applied the name of neuromerism. They see in this series of constrictions and dilations of the nervous system a condition comparable to the constrictions and dilations of the ventral nerve cord of invertebrates or their cephalic ganglia. These primitive neural segments they divide into two classes; those of the brain region, or the "encephalomers," and those of the spinal cord region or "myelomers."

They have found that in the trunk the developing spinal nerves bear constant definite relations to these primitive myelomers or cordal segments, and they hope to be able to show that a corresponding relation is to be found in the brain region between the developing cranial nerves and the primitive segments of the brain or encephalomers, although the relationship may not be so plainly made out.

"It is necessary for these investigators in using these primitive segments of the nervous system as criteria in attempting to elucidate this question of cephalic segmentation, to show :"

"First, the comparability of encephalomers with myelomers, not only structually but also in relation to nervous outgrowths, and to those great divisions of the mesoderm on which as I have already shown, the distribution of the peripheral nerves ultimately depends."

"Second :—The correspondence with one another of neuromers, mesomers, branchiomers in each individual head segment. Yet the majority of these investigators, whom I have just mentioned have failed to bear this in mind, which has resulted in a diversity of opinion we would naturally expect in work based on insufficient knowledge." However, a paper has appeared, during the course of this summer by Dr. Neal, of Harvard, which has done much towards dispelling this trouble. Neal here considers the subject from every point of view and in discussing the matter, has left no stone unturned or argument unused. He says :—"Although the structure of myelomers and encephalomers is different, yet in the stages of embryoic development, when both are present, they are seen to have a segmental value from the fact that corresponding with them there are an equal number of mesoderm somites. These somites are morphologically comparable and serially homologous with trunk somites. I conclude then that there was a primitive correspondence between neuromerism, mesomerism and branchiomerism."

Neal also regards the three eye muscle nerves III., IV., and VI., as homologous in every way with ventral spinal nerves.

Pre-otic and post-otic metameres are homologous with one another and with trunk metameres.

He regards five mesomeres, alternating with six neuromeres in the otic and pre-otic regions of the vertebrate head ; and so eleven neuromeres finally included in the whole head.

Whatever may be the verdict of the future regarding the scientific value of these neuromeres, their discovery and study has at least undoubtedly proven that there is a segmentation of the nervous system of vertebrates of such a primitive nature as to point to its being an inheritance from the time before vertebrates had acquired their present vertebrate characteristics.

They establish certain general facts which we shall always have to bear in mind in our search for the origin of the vertebrates.

It is a strange contradiction in things, after what the discoveries of the last ten years have taught us regarding the anatomy and morphology of animals like rhabdopleura, cephalodiscus, and balanoglossus,

which have been shown in such a beautiful manner to be the very connecting links between vertebrates and invertebrates, that when we come to consider their nervous system, we are no better off than before and they afford us no additional light as to its origin or primitive condition in vertebrates. We have only to recall the profuse and vague dermal nervous system of balanoglossus and attempt to compare it with that of a vertebrate like amphioxus, to realize how hopeless becomes the task to trace any possible homology between the two.

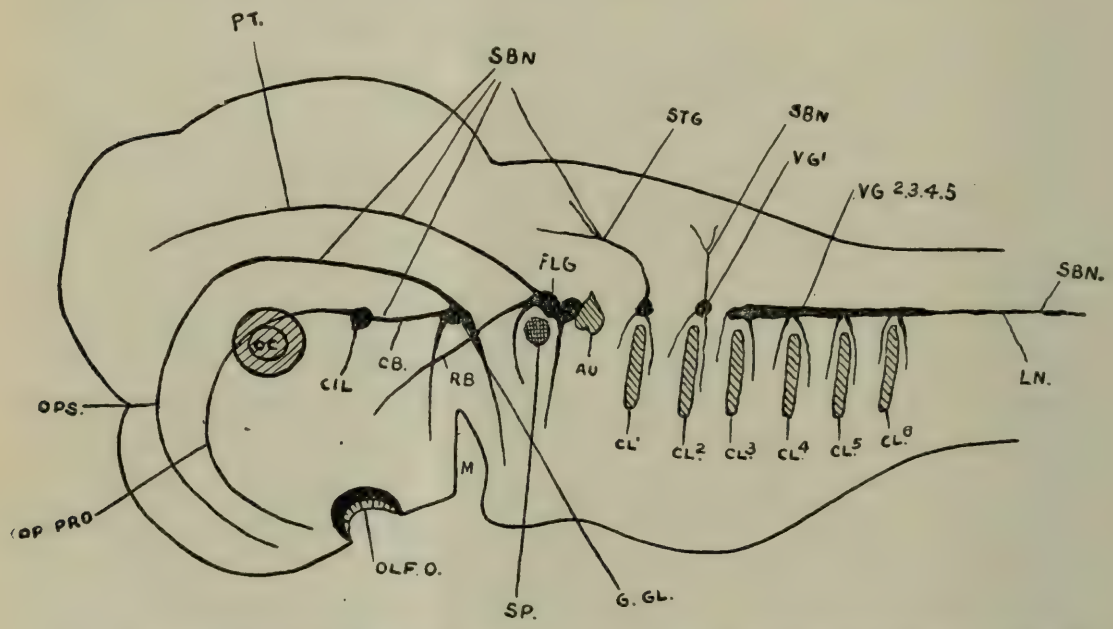

FIG. II. A diagrammatic figure of a vertebrate embryo head showing the distribution of the cranial nerves and their relation to gill clefts and supra-branchial sense organs according to the views of Beard. (Beard.)

AU.—Ear.
CB.—Nerve connecting ciliary and gasserion ganglia.
CIL.—Ciliary ganglion.
Cl^1—Cl^6—Gill clefts.
FLG.—Facial ganglion.
G.GL.—Gasserion ganglion.
LN.—Nerve of lateral line.
M.—Mouth.
OC.—Eye.
Olf. O.—Olfactory organ.
OP. Pro.—Ramus ophthalmicus profundus.
OP. S.—Ramus ophthalmicus superficialis.
PT.—Portio facialis of ophthalmicus profundus.
RB.—Ramus buccalis 2nd supra branchial nerve of the facial
Sbn.—Supra branchial nerves.
SP.—Spiracle.
Stg.—Supra temporal branches of the Glossopharyngeal.
Vg^1—Vg^5.—Vagus nerve.

With the conclusion of this subject of neuromeres, our most recent research may be said to end, though in passing I cannot help mentioning the work of the English physiologist Gaskell, which will undoubtedly do, and has already done much towards unravelling this mystery of the head.

The short limit of this paper renders it impossible for me to enter into any discussion of Gaskell's views. But it will be upon the lines of physiological investigation laid down by Gaskell that the great ad-

vances of the future will be made which we hope will lead to the final solution of this problem.

It is now over 100 years since this question of the segmentation of the head first took definite shape, yet to-day may we ask, how much nearer are we towards its final solution? How many segments compose the head? Beyond knowing that the head is certainly composed of more segments than the two or three of Oken's time, we cannot fix the number and before we can do so many other great questions will have first to be answered; not least amongst which is the meaning of metamerism or segmentation itself and the origin of the vertebrate nervous system.

Meanwhile in the words of Professor Locy, we may regard the head as the "highest product of evolution, the goal towards which in the morphological world, nature has been working for countless ages of time."

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WHY MEDICAL MEN SHOULD BE A COURT OF JUSTICE IN CRIMINAL CASES.*

BY

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In this short paper I cannot hope to touch all the evidence in support of making medical men the sole judges of criminal responsibility. In attempting to discuss the subject I am aware there is much new and unexplored ground and consequently some of my opinions will be oppugned. This is the first time, so far as I am aware, that this subject has been brought to the notice of a medical society; and if I should be able to demonstrate the proposition that medical men *should* be a court of justice in criminal cases, then will it become the duty of legislators to enact laws in conformity with scientific advancement, and to give medical men the status to which they are entitled as the authors of scientific knowledge touching crime and criminal responsibility.

The above title suggested itself to me on account of my being called to give evidence in criminal cases where one or the other party to the suit sustained bodily harm or injury. What impressed me, together with the fact that I generally lost a day for sixty cents, was that the crime and not the criminal was under examination. I say this without prejudice to the exponents of the law, the judges of the court, and members of the bar. While the legal profession alone has faculties for examining a criminal act, I hold that the medical profession alone can properly examine the criminal.

The test of criminal responsibility which our courts are bound to apply is that formulated by the judges in McNaghten's case, 10 Cl. and F. 200, which may be stated thus:—"The ability of the accused to distinguish right from wrong at the time of the offence." The judges practically say that, it being once established that the prisoner's mental disease did not prevent him from knowing that what he was doing was wrong, then, all evidence of insanity, tending to destroy his freedom of will, does not displace his criminal responsibility. Now, alienists to-day repudiate such a criterion, and say the proper inquiry is, "whether, in consequence of congenital defect or acquired disease, the power of self control is absent altogether, or is so far wanting as to render the individual irresponsible." As has again and again been shown, the unconsciousness of right and wrong is one thing, and the powerlessness, through cerebral defect or disease, to do right, another. To confound

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them in an asylum would have the effect of transferring a considerable number of the inmates thence to the treadmill or the gallows. A writer in 12 Criminal Law, page 4, says: "The rule in the McNaghten case is attacked because it holds a partially insane person as responsible as if he were entirely sane, and it ignores the possibility of a crime being committed under the duress of an insane delusion operating on a human mind, the integrity of which is destroyed or impaired by disease, except perhaps where the imaginary state of facts, if real, would excuse or justify the act done under their influence."

Although the field of criminal responsibility is largely unexplored, such men as Hodge and Tuke have thrown the light of science over the dark field and made it possible to cultivate it. The study of criminal responsibility presupposes a study of human nature, of man himself. It is in the nature of man to dominate the world, to plan, to calculate, and to work out his existence. It is natural for him to hope, to pay homage, to love, to envy. These are common attributes, implanted in him by God and Nature. Each species of the lower animals has a nature implanted in it peculiar to itself. By that nature, as well as by form, size, and appearance, are we enabled to distinguish one species from another. There are certain habits, traits, or instincts in each that distinguish it from all others. Each begets its own kind, and never is a species propogated that cannot be distinguished by its antecedents. Human nature distinguishes man from all other animals. While the distinguishing element is constant and immutable, there are certain inherited physical, mental, and moral differences. Some have an inherited predisposition to disease, some to degeneracy, to immorality, to crime. Thus syphilitic and insane parents are apt to beget syphilitic and insane children. The sins of the father shall be visited on the offspring to the third and fourth generation. Like begets like; thus large men beget large children and fair parents beget fair children. Thistles do not grow on thorn bushes. Poets are born, not made. So may we say with truth, the artist, the painter, the musician, the witty, and the wise are born, not made. We are all born with different capabilities, different degrees of intelligence, differently endowed, and each with a different horizon. The poet is not made, but he, too, in common with us all, is subject to external influences and organized systems of education prepared to cultivate the mind. "A good tree cannot bring forth bad fruit nor can a bad tree bring forth good fruit." Hence we are all the product of our antecedents. So the doctrine that all men are born equal is absurd. Surely the idiot born is not the equal of him born *mens sana in corpore sano*. Between the idiot and normally born, there is every gradation of inequality, mentally, morally, and physically. Responsibility varies in each according to his intelligence, his capital, his power

of resistance. In the church, the state, and social order, the rights and duties of members are founded on absolute equality among themselves.

Absolute equality does not exist, therefore, the laws governing the rights and duties of members cannot be uniform and constant for all. In the case of idiotic and insane persons, the law at present recognizes their condition, and under the law they are regarded as irresponsible. But what of the class of alleged offenders, hovering between mental health and iodicy or insanity, those on the threshold of insanity though not insane? Is it possible to refer their so-called offenses to morbid conditions? The object of legitimate law is to secure to every individual his inalienable rights, not to grant him these rights, nor to take them away. The habitual criminal, mentally and physically abnormal, in physiognomy, in various stigmata of degeneration, in deficient reason, lack of forethought, vanity, egotism and emotional irritability, has the right to escape punishment for his so-called criminal acts, provided they be the result of his abnormal condition, whether insanity exists and can be proven or not. "No physical or moral misery, no suffering, however corrupt it may be, should frighten him who has devoted himself to a knowledge of man and the sacred ministry of medicine; in that he is permitted to see all things, let him be permitted to say all things." Thus medicine undertakes to save the honor of mankind before the Court of Morality, and individuals from the judgment of their fellow men.

In the course of almost every case of idiopathic insanity, *i.e.*, insanity due to over exertion of the brain, we have a fairly well marked prodromal period indicating the diseased balance between nutrition and function in the kinæsthetic area. This prodromal stage—this transitional stage between mental health and insanity—has not been fully investigated, and cases are described by the alienist only when fully developed. The essential feature of insanity is an abnormal response to stimuli from within or without, while neurasthenia appears to be the expression of a morbid unhealthy reaction on the nervous centres which preside over the functions of organic life. The changed condition in the cells of the cortex, probably combined with the toxin introduced in the blood through the deranged metabolism of the cells, must naturally lead to disturbance of the higher centres of the brain, which, unless corrected, must necessarily lead to definite mental disease. It is claimed, and very correctly I think, that cases of neurasthenia frequently terminate in insanity. But the law does not recognize neurasthenia as an excuse or palliation because, forsooth, neurasthenia is not insanity. In neurasthenia one or more of the faculties may be affected, the remainder remaining normal. The neurasthenic may know the difference between right and wrong, and yet not have sufficient self control to prevent him from doing wrong. He is as powerless to prevent the acts resulting from his diseased con-

dition as he is to prevent a thunder storm. He is the creature of the forces that have made him what he is; the leopard cannot change his spots. Section 11, page 37 of the Criminal Code, says, "No person shall be convicted of an offence by reason of an act done or omitted by him when laboring under natural imbecility or disease of the mind, to such an extent as to render him incapable of appreciating the nature and quality of the act or omission, and of knowing that such act or omission was wrong." Now splitting hairs is a reproach only in so far as one is splitting the wrong hairs. Every lawyer knows how often a fine point in procedure or in law will turn the scales for his client and against the other party. In like manner how often a fine point, scientifically examined, would weigh to reconstruct a legal definition, that would excuse or justify an alleged criminal or condemn an imposter.

It is remarkable how, without pay or due credit, the public appropriate the discoveries of medical men, especially when the discovery makes directly for the public good. Instead of receiving recognition from the public for work done in psychology and pathology, members of the profession are simply subpœnaed to give evidence before a court of justice, often without pay or profit. "We teach them to swim and then they drown us." It is time, therefore, that we asserted our rights to prevent the unseemly conduct witnessed every day in our law courts, of pitting one medical witness against another, neither of whom may ever have made a special study of the nervous system, and many of whom are "experts," only in name. As an alternative, let there be a Medical Court for Criminal Cases, one composed of educated, medical experts, whose broad culture and special knowledge will make them the highest authority in the land on such questions as criminal responsibility, whose professional skill will enable them to adjudge and differentiate the motives, the capital, and the power of resistance of the unfortunate criminal, and who will prescribe treatment or punishment according to the necessities of each case.

ABNORMAL ELECTRICAL STORAGE IN THE HUMAN SYSTEM.

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Acupuncturation as a remedial agent in painful affections, dates back for over 200 years, when it was used in both China and Japan. It is supposed to have been entirely unknown to the Grecian, Roman and Arabian physicians. In Europe it was first known about 170 years ago, from the writings of a Dutch surgeon, Ten-Rhyne, who wrote in 1683, and attention was also carefully drawn to it by Kampfer, Churchill, Scott, and Elliotson, in England ; Dantu, Velpeau, Dance, and Meyraux, in France; and Heyfelder, Grafé, and Sachs, in Germany; Carraro and Bellini, in Italy, and Ewing, Coxe and Bache, in the United States, who have all been active workers and thinkers on the use of the Acupuncture. Cloquet, of Paris, in 1862, published his remarkable treatise on this subject, which did much to revive its use in practice. For many years I have been in the habit of treating cases of supposed muscular rheumatism by the insertion of small (No. 8) fine steel needles, and the number used varied according to the extent of the affected parts, and as a general rule, the seat of pain will indicate the precise place and extent to which the needles should be used. We need not fear the number used, which are inserted from one-half to three-quarters of an inch, through the skin, into the muscular tissue, at distances apart from an inch to two or three inches, according to circumstances, where they should remain one or two minutes, and then be removed. Before puncture, the painful muscles are found hard and tense on pressure, and the needles are introduced into the parts affected by the pressure of the nail, slight force being necessary. When *in situ*, a moment or two, the muscles relax, their condition, almost of tetany, become soft, pliable and free from pain, and the needles are removed quite easily, no force whatever being required, and immediately after the patient is able to leave the bed, and walk about freely, pain having departed, with marked rapidity. The question which naturally suggests itself is, what is the exact condition upon which the pain depends. True, some authorities doubt its rheumatic nature, and regard it as a neuralgia of the sensory nerves of the muscles. Yeo does not consider it correct to group it with these rheumatic myalgic attacks, conditions of muscular aching or stiffness, such as follow excessive use of certain muscles in riding, rowing, bicycling, etc. The pain I have never found in those well-defined condi-

tions associated with febrile disturbance, and varies very little as to its usual intensity, which is invariably increased by even the slightest effort to move the body when in a fixed position. The most usual form is known as "Lumbago," sudden in its onset, and usually master of the position for the time being.

Dunglison (New Remedies, p. 73) states that Schweiger (Riecke, s. 16) demonstrated by the multiplier, that when the free extremity of an inserted needle is connected with the ground by means of a conducting substance, or is put in connexion with a soft part of the body of the patient, it becomes the seat of a galvanic current. In 1827, M. Nobili, having constructed a very sensitive galvanometer, was enabled to detect without doubt, the existence of an electric current in the frog. He observed that when the needle was placed in the circuit it was deviated some 30°. Du Bois Reymond by elaborate researches, demonstrated that currents, like the so-called frog current, may be observed in any animal, whether warm or cold blooded. The escape of electricity under such circumstances, is extremely important, and points to abnormal storage in the tissues of a positive or negative character, and stored, not unlikely, as the result of an altered condition of the various fasciæ, the result of sudden draughts or cold. Immediately the needles are touched, after insertion, the electrical accumulation is simultaneously discharged, and passes through the body of the operator without any serious result. This state of parts is termed muscular rheumatism, and known as pleurodynia, torticollis, and lumbago, sudden as to onset, painful as to condition, and rapidly relieved defines pain, (*Dict. of Med.*, p. 1080) as "the representative in consciousness of a change produced in a nerve-centre by a certain mode of excitation." A striking peculiarity in lumbago, *et al*, is that no pain is excited by touching the skin superficially over the affected parts, the touch being equal to that in the usual state of health, from which we would infer the absence of any surface hyperæsthesia. The intensity of pain must have some connection with an excited condition by electrical accumulation, in not only the muscular tissues, but the nerve tissues as well, supplying nerve force to these parts. This source of irritation, once removed by acupuncture, and electrical discharge, almost immediate relief is the phenomenal result. After removal of the needles, the skin is sponged over the site of punctures with ordinary water and followed by friction of a course towel for a few moments.

Case No. 1.—R. P., æt. 42 years, enjoys usually excellent health, never experienced any serious illness except a few occasional attacks of muscular rheumatism. Robust stature, and no evidence of any organic trouble whatever. March 25th, seized suddenly after exposure to a draft, with sudden pain throughout almost the entire lumbar region,

which confined him to bed, being quite unable to turn or move without great suffering. No increase of temperature or even acceleration of pulse. The muscles in the lumbar region were firm on pressure and quite tense and rigid. Twelve No. 8 needles, were introduced into the rigid parts and the relief was almost immediate. In ten minutes he arose from his bed and walked around his room, which he could not possibly do before acupuncturation. March 26th, able to move around his room freely and on the 27th returned to his seat in the House of Commons.

Case No. 2.—H. T., aged 45 years, physical formation perfect. No organic disease whatever, and as a rule enjoys excellent health. Some 25 years ago, had an attack of acute articular rheumatism after exposure and bodily fatigue. Up to the present his digestion has been perfect. May 3rd, underwent considerable fatigue in "The Commons," and being exposed to a draught, contracted a severe attack of lumbago and pleurodynia, which confined him to bed. May 4th, quite unable to move out of one position without severe pain in both right side of the thorax, and almost the entire lumbar region. No increase of temperature or acceleration of pulse. The bowels had been well relieved, and the urine voided in normal quantity, contained an excess of lithic acid. Tongue moist but not coated, and up to the date of attack, the digestive functions were perfect. On the night of the 4th, I found him almost pinioned down and unable to move, or breathe vigorously, without pain and suffering. Fourteen No. 8 needles were inserted into the back and side of thorax affected. The various muscles implicated were firm and rigid, until punctured, after which relief was instantaneous, and he arose from his bed and walked freely around his room, owing to almost perfect freedom from pain. In two days afterwards, he returned to the Commons and discharged his usual official duties without any apparent inconvenience.

NOTES FROM PRACTICE IN THE ARGENTINE REPUBLIC.

BY

F. G. Corbin, M.D., (McGill, '90,) Mendoza, Argentine Republic.

Pylorectomy.

N. V., forty years of age, a worker in stone pavements, came to my consultation room on September 1, 1899, complaining of loss of weight, inability to digest his food, vomiting if he took a very little solid food, and a slight pain in the epigastrum. He was very emaciated and low spirited. As he confessed being, or rather having been, a hard drinker, and as no tumour was to be felt in the stomach, I thought it was a case of alcoholic gastritis and put him on a milk diet with some bismuth and soda powders. As he was better on the 10th, I told him to take a little soup with the milk.

He continued to improve up to the 17th when he became worse again, and vomiting and indigestion returned. Back to milk I ordered him and added two centigrams of cocaine to the powders. He said there was no blood in the vomit, in fact, nothing but the food taken. His condition continued about the same up to October 9th, when I proposed a laparotomy, having come to the conclusion that there was pyloric obstruction, perhaps malignant in nature. He consented and went into the San Antonio Hospital on October 10th.

On October 11th, aided by Drs. Goldsack and Paladini, I opened the abdomen, making an incision parallel with the ribs, beginning in the middle line. Although this incision may not be the classical one for a pylorectomy, I used it, hoping, as it proved, that it would give me more room than a median one. I may say that in my experience it is always better to open the abdomen through muscle, but without cutting across the muscle fibres. For instance, with the median incision, I always go half a centimetre from the median line and split the fibres of the rectus muscle, rather than try for the exact linea alba. I found the pylorus and right end of the stomach of a stoney hardness, and on invaginating my index finger, I found a stricture, the lumen of the pylorus being reduced to almost nothing. There were no adhesions to surrounding parts and as far as could be made out no glandular infection.

I determined to take away the cancer, and after enlarging the abdominal wound pulled out the stomach and pylorus as far as possible, which owing to the normal attachments of the duodenum, is more difficult than in other parts of the intestine. I now passed well to the left of the induration, an intestinal clamp (applying it almost in the middle of the

stomach) and another as far to the right of the pylorus as possible. With scissors I next cut away all the part between, as shown in photograph (I). This pair of scissors was put aside and not used again during the operation. The mucous membrane of both extremities was then wiped with gauze moistened in saline solution and, after a little trouble, I was able to bring the edges of the cut surfaces together. I first sewed the mucous membrane of the posterior inferior border of the cut stomach to the posterior border of the cut duodenum, then united the anterior and posterior walls of the stomach in the upper part, using a continuous suture of No. 1 silk. I next united the rest of the stomach part of the incision by a continuous Dupuytren suture, and after that, and with the same form of suture, I brought the peritoneum well over my line of suture in the muscular and serous coat. The front part of the duodenal mucous membrane was then united to the anterior inferior mucous membrane of the stomach and also the serous and muscular coats of both, and over all the peritoneal coat drawn. The only part in which I had any difficulty was in the suturing of the serous and peritoneal coats at the back of the duodenum. Figure 131, page 832, "Jacobson," 2nd edition, gives a fair idea of what was done, but I did not use interrupted sutures as shown in this figure. I think interrupted sutures are more often printed in books than used in intestinal surgery, but I may be wrong. One thing is certain, a continuous Dupuytren suture is just as good and takes at most one half the time. Why then should it not be used? I believe that any procedure which lengthens the operation and, consequently, the anæsthesia should not be practised. The clamps were now taken off and three or four arteries, probably the right and left gastro-epiploicas and branches of the gastric, were tied and the peritoneum drawn over the knots. I put in a gauze drain for two days, sewing up the external wound except at its lower corner. "When in doubt, *drain!*" somebody wrote in a medical journal. This time I was a little doubtful, and drained.

For four days I kept my patient on nutrient enemata, not allowing him to swallow anything. The highest temperature reached was 37.4° C. on the second day. This rise of $^{4}/_{10}$ of a degree above normal was perhaps due to the drain, as after it was removed the temperature never rose above 37°. I may say here that 36.8° C. is the normal temperature here in Mendoza. We are 650 metres above sea level. I have taken the temperature of all the men of the 1st Regiment, Mountain Artillery, and found that from 36.6° to 36.8° was the rule, not a single man reaching 37° in the axilla.

V. made an interrupted recovery and left the hospital on November 15th, one month and four days after the operation, having gained 4 kilos in weight. The photograph sent was taken on December 24th; he then

weighed 9 kilos (20 pounds) more than before the operation and felt strong and well. Photograph II.

Will the disease return ? Time alone will tell. One thing is certain, that as far as the local disorder is concerned it was thoroughly extirpated as seen in the photograph of the stomach. There is nearly an inch of healthy duodenal tissue on the left, while at least two and a half inches of healthy gastric tissue was taken away on the right. Seven months and a half have now passed since the operation and my patient is still well, but I am sorry to say he has gone back to his alcoholic habits.

Hepatectomy.

J. S. C., 34 years of age, a finely built man, entered San Antonio Hospital on January 11th last. He had never been sick. His father and mother are healthy. Three months before admission, he began to feel a lump in the right side of the abdomen just below the ribs. He had never had any pain nor had he suffered from indigestion or other intestinal disorder.

On examination, a tumour about eight inches long and four broad was felt in the right side of his abdomen. This tumour could be felt very distinctly, extending from the right hypochondrium, where it appeared to be fixed, to the upper border of the right iliac region. The central portion was in front of the umbilicus, and was very freely movable, so much so that if the man turned upon his left side it would fall over and could be distinctly felt to the left of the middle line. It moved up and down with the liver during respiration. As may be supposed, a correct diagnosis was only made after opening the abdomen. My idea was a very much distended gall-bladder or else a hydatid cyst, both of which are common enough in this country. The first is very common here in Mendoza where the water is laden with lime, the second in all parts where sheep and dogs are plentiful.

On opening the abdomen by an incision extending along the right border of the rectus muscle from the lower border of the ribs to about three inches below the umbilicus, I found the tumour to be a prolongation of the liver. It was slightly adherent to the epiploon on the left side, was pedunculated, and on cutting into it showed pathological changes attributed to encephalomatous cancer. I decided to remove the new growth and treat the pedicle, which was a little bigger than a man's wrist, externally, as formerly recommended by Kimball, Wells, and others in hysterectomy. Tying off the attached epiploon, I removed the tumour from the abdomen and drew its neck well up into the upper edge of the wound. In the meantime a piece of rubber tubing had been well boiled and put into rectified spirits ready for use. I used tubing the size of my finger. Two turns of this were now made around the neck of the tumour close to the skin, and a pair of forceps put on to keep it from

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slipping. I next cut off the main part of the new growth a centimetre above the tubing. I now passed a grooved sound through the neck between the two turns of the tubing so as to support the neck. I had no pedicle needle handy but my director served the purpose admirably. The peritoneum was next stretched tight around the neck, just below the rubber tubing and down to the lower edge of the wound. After that the muscles and skin were united. The photograph (III) was taken on the eighth day. The highest temperature reached was 38.1° C. on the evening of the second day.

Everything went well, the ligature being taken off on the twelfth day and the wound gradually closed up. The lower part of the wound closed by first intention. A good deal of bile always came away from the cut liver, but this same bile appeared to stop the entrance into the wound of pus germs, as I never saw even a drop of pus around the wound.

C. left the hospital well on February 26th. The piece of liver taken away weighed 720 grammes. I think this case must be rather rare. I only see 21 cases mentioned in Greig Smith, while Forgue and Reclus, edition 1898, says that up to date there have been 30 cases. My case is, according to Forgue and Reclus, the third largest portion of liver tissue taken away successfully up to 1898. Israel operated on two cases in which he took away 750 grammes in one and 1225 grammes in the other.

Implantation of Ureters in the Bowel.

P. G., 38 years of age, albino, came into hospital on October 10th, 1899. Her first child was born on November 29, 1896, after a difficult labor, and a second on June 24, 1899. This latter required instrumental interference on the part of her attendant, Dr. Bello. The child was dead and the placenta was removed piece-meal. A fistula followed and was operated on by Dr. Bello on August 18th. I do not know what operation was performed, but it was not successful and she consequently entered the San Antonio Hospital on the date before mentioned.

On examination, I found a very narrow undilatable vagina (scar tissue) and fixed uterus without any appreciable neck in the vagina, *i.e.*, the os uteri appeared as a small hole in the fundus of the vagina. After studying the case, I decided to operate on her in the way described by Kelly, but determined to modify his operation by entering by the abdominal route.

On October 15th, assisted by Drs. Day, Goldsac, and Paladini, I opened the abdomen in the middle line, separated the bladder from the uterus, and stitched up both, putting a gauze drain in between these organs and between the two mouths of the ureters into the vagina. A soft sound was put into the bladder. The drain was taken out in forty-eight hours, when I thought my patient well and out of danger. She

had no fever and had been doing well. On October 18th I was taken ill with typhoid fever, so did not see her again for some months. What had happened in the meantime was as follows :—The wound in the abdomen had healed by first intention and the gap in the vaginal vault closed in a few days, but after a few days more, urine began to come away by the uterus. Several days after this Dr. Day removed a calculus from the cavity of the uterus. I suppose this calculus was the cause of the failure of the operation. It was cigar shaped, an inch in length, about the size of my little finger in the middle, and very rough and uneven. On October 29th, she left the hospital to return on my getting better, January 3, 1900.

On January 9th, Dr. Day and I tried to close the os uteri so as to make one cavity of the uterus and bladder opening through the urethra, but, after half an hour's work, we were forced to give it up. The narrow undilatable vagina and fixed uterus without any vaginal portion were the cause of our failure.

On January 25th, I decided to transplant the ureters and was assisted by Dr. Day while Dr. Paladini gave the anæsthetic, chloroform. We opened the abdomen a little to the left of the first incision from the umbilicus to the pubes. Our patient was now put in the Trendelenburg position and the posterior layer of the peritoneum incised over the left common iliac artery. I at once found the ureter, and separating it from the loose tissues around, tied it with a silk ligature as far down as possible, cut it, and put a pair of forceps on the distal end. I now went for the right ureter, but found it only after half an hour's search. It was at least an inch and a half from its normal position towards the outer or, as the case was, right side. The right side was treated as the left had been half an hour before. I now proceeded to pick up the posterior peritoneum and stitched it with a fine, catgut, continuous suture on each side, letting the ureters come through at the upper margin. The sigmoid flexure of the bowel was now lifted up clamped and punctured and the right ureter introduced into the hole and stitched there with fine silk. The left ureter was longer and was put into the gut in the same way, but lower down in the upper part of the rectum. The moist gauze which had been protecting the intestines was removed and the whole wound closed. I had been an hour and twenty-seven minutes. Recovery was uneventful, if one excepts the vomiting, which continued for four days. There was no fever at any time. At first she required to empty her rectum every hour, then every two hours, and later every three or four hours. She left the hospital twenty-two days after the operation.

In spite of what was expected by some of my colleagues, my patient has done remarkably well. She now (May 16th) has her bowels moved five or, at most, six times in the twenty-four hours, feels no discomfort

whatever, and is very well pleased with the result. So far, four months after, there is no colitis or other inflammatory process and no sign of nephritis. I will report again on this case a year from now.

Radical Cure of an Inguinal Hernia in a Woman 98 Years Old.

Inguinal hernia in a female is not common. In more than 100 hernia operations I have only twice had to do with inguinal herniæ in women. Operations on persons 98 years of age are also not common. I at least have never heard of such a case. This woman, nearly a century old, remembers the War of Independence of this country (1810), and she was a widow of 59 at the time of the great earthquake (1861), which destroyed Mendoza.

About a month ago she came into my office to consult me regarding her hernia, which was painful and about the size of a goose egg. I examined her heart, lungs, urine, etc., and finding no disease told her that I would like to operate on her for the hernia. She at once consented and I sent her to the San Antonio Hospital, where on April 28th, I did a radical operation as described by Kelly in his *Operative Gynæcology*, Volume II. It was done under chloroform in seventeen minutes. I was assisted by Dr. Day.

The old lady lives here in Mendoza. The wound healed by first intention, she leaving the hospital on the 15th day. I report this case as a curiosity, as I suppose she is the oldest person in the world on whom a successful laparotomy has been performed.

The Treatment of Acute Gonorrhœal Arthritis.

I was very much surprised to see in Dr. James Stewart's paper on Gonorrhœal Arthritis in the March number of the MONTREAL MEDICAL JOURNAL, that no mention was made of operative treatment for the relief of these cases. I have operated on one with very good success and helped Dr. O'Connor of the English Hospital in Buenos Ayres with two others, of which one was gonorrhœal and the other acute rheumatism. As far as I have learned, Dr. O'Connor certainly has had very good success in all of his cases. In the *Glasgow Medical Journal* of 1898, Dr. O'Connor reports nine cases, and in the *Lancet* for July 8, 1899, he adds two more, both cured by operation.

Would it not be worth while to hand over the acute arthritic cases to the surgeon at the start, instead of giving salol, and salicylates or even hot baths? The results of medical treatment up to date are not even half good. Why not give the surgeons a chance? Of course the earlier the joint is opened the better appears to be the result. Personally, I intend to practice the surgical treatment in all the cases which come to hand, as Dr. O'Connor has been doing for the last three years or more.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Iodide of Iron in the Treatment of Certain Forms of Infective Arthritis.

WILSON, J. C., M.D. (Philadelphia). "Iodide of Iron in the Treatment of Certain Forms of Infective Arthritis." *Festschrift in Honour of Abraham Jacobi, M.D., LL.D., May 6th, 1900.*

Any means that will help in the treatment of infective arthritis, especially the gonorrhœal form, will be a great boon.

For a number of years Dr. Wilson has been treating cases of the latter disease with iodide of iron and with favorable results. In the paper in Jacobi's Festschrift, he gives an account of three cases treated in this way ; the leading features of the third case reported by Dr. Wilson will sufficiently illustrate the character of the arthritis and the result of the iodide of iron treatment.

The patient was a clerk, aged 21. He was admitted into the Philadelphia Hospital on the 19th of October, 1899.

He had gonorrhœa three years previously, followed by an arthritis which lasted eight months. Two months before his entrance to hospital he contracted a second gonorrhœa, which was still acute on his entrance and with it there was arthritis of both ankles and the smaller joints of both feet. He was first treated with strontium salicylate and salol with a slight but temporary improvement. A week after his admission the pains in the feet were severe, but the urethral discharge had ceased. He was given syrup of the iodide of iron in doses of ten minims three times daily. Two days later, there being no improvement, the dose was increased to twenty minims three times a day, and on the fifth day of November it was still further increased to thirty minims. Three days later he was improving and on the fifteenth day of November the arthritis, which had involved the left knee joint, had subsided so much that he was able to walk about the ward. Two weeks later he was discharged cured. The constitutional disturbances during his stay in hospital was slight, the temperature ranging between 97° and 100° F.

All the three cases, according to Dr. Wilson, not only illustrate the curative influence of the iodide of iron, but they also place the results of treatment by this medicament in striking contrast with the failure of ordinary remedies such as the alkalies, the salicylates, salophen and potassium iodide.

Chorea.

STARR, ALLEN M., M.D., LL.D. "Chorea." *Jacobi's Festschrift.*

This paper deals with 1400 cases of chorea, treated in the Nervous Department of the Vanderbilt Clinic during eleven years.

There are several features of this disease pointed out which, although not new, are worthy of being widely known. Emphasis is laid on the fact, that nearly always the disease is met with in poorly fed and badly housed children. In 60 per cent. of the cases a condition of anæmia was present. A general state of malnutrition appeared to be the most constant element in the etiology of the disease. Mental shock and overstrain at school did not appear to be at all frequent. In 290 cases there was a history of true rheumatism. One or both parents were found to have had true rheumatism in 263 cases. In 175 cases a cardiac murmur, which persisted after the cure of the disease, was found, while in 123 cases a murmur was found to be present during the course of the disease which disappeared afterwards. In 62 per cent. of the cases no murmur was found. This we believe to be a much smaller number than is usually found.

Dr. Starr believes that the increased frequency of the disease in the early spring months is due probably to the general state of malnutrition being at this period of the year more pronounced than earlier or later on, the child during the winter months being more confined than during spring or autumn. In 25 per cent. there was a history of previous attacks, and it was noticed that in almost all the relapsed cases, the various attacks occurred at the same time of the year and under practically identical circumstances.

Dr. Starr has found arsenic to be the most reliable medicinal drug. He gives it rapidly up to the point of intolerance, and then slowly reduces and continues it in doses sufficient to keep the child on the verge of intoxication. Mention is made of the varying susceptibility of different children to the action of arsenic. In two cases severe general arsenical neuritis appeared during the course of treatment, although these two children were not at the time taking as much of the drug as was administered without ill effects to many others. Recovery followed in both cases. Antipyrine next to arsenic, is looked upon by Dr. Starr as the most valuable remedy in chorea. Many other drugs were tried but without beneficial effects. The treatment of chorea in the outdoor room of

an hospital is quite a different matter from the indoor treatment. In the great majority of cases rest in bed with good feeding without the use of any drugs is sufficient to bring about a marked change for the better. It is uncommon to meet with cases that are not practically well in two weeks.

Acute Dilatation of the Heart in Influenza of Children.

Forcheimer, F., M.D. "Acute Dilatation of the Heart in Influenza of Children." *Jacobi's Festschrift.*

According to Forcheimer's observations, there are two forms of acute dilatation of the heart in influenza: "One presumably produced by the action of the toxin on the nervous system of the heart, and possibly upon the myocardium, the second form occurring in such conditions when the outflow of blood is materially interfered with on account of mechanical conditions."

The symptoms of the first group, in addition to the usual febrile symptoms of an influenza, are rapid breathing (60 to 70) without disturbance between inspiration and expiration. The pulse is rapid, frequently intermittent, but otherwise normal. Physical examination of the chest shows usually an entire absence of pulmonary signs. The cardiac dullness is found increased transversely, but rarely is any murmur to be heard. In the course of from 24 to 72 hours all these symptoms and signs disappear. The child returns to its normal state and remains well, or the various symptoms of a more prolonged attack of influenza develop. Dr. Forcheimer discusses the various views that have been advanced to explain the state above described, and considers that it is of nervous origin—a poisoning of both the respiratory and cardiac accelerating centres in the medulla. "The production of acute dilatation of the heart, as the result of disturbance in innervation has been proved in many instances."

The second form, which arises from states which interfere with the outflow of blood on account of mechanical conditions, presents a different clinical picture from what may be called the nervous form. It is a much more serious form, not infrequently proving fatal, especially in adults. There is, however, a much greater tendency to recovery in children. The symptoms are those of a cardiac collapse. The pulse is generally slow, sometimes very frequent and intermittent, and attacks resembling angina are sometimes present.

James Stewart.

Obstetrics.

UNDER THE CHARGE OF WILLIAM GARDNER.

Pregnancy Associated with Myofibromata of the Uterus.

SKENE, A. J. C. "The Management of Pregnancy Occurring in Connection with Myofibromata of the Uterus." *Am. Gyn. and Obstet. Jour., June, 1900.*

That sterility is the rule in fibromata of the uterus is due to the position of the tumours in the uterine structure. As the result of a careful study of a series of cases, which he reports, Skene gives the following classification of the relation of fibromyomata to child bearing :—

(1) Submucous tumours, large or small, cause sterility as a rule.

(2) Small subperitoneal myofibromata do not always cause sterility, nor complicate child-bearing to a very marked degree.

(3) Interstitial tumours, unless so small that they cannot be detected, and large subperitoneal tumours closely connected with the muscular tissue of the uterus, do not cause sterility in all cases, but they are a most dangerous complication to gestation because they predispose to miscarriage and render delivery always difficult, often impossible, and always exceedingly dangerous.

The second class of cases requires attention during the early months of pregnancy to keep the uterus in position, and may require help during delivery with protection from post-partum hæmorrhage.

Skene strongly insists that all cases of gestation in connection with fibromyomata, that give no promise of going to full time, should be subjected to hysterectomy. In such cases, while operation may be undertaken as soon as the diagnosis of gestation is satisfactorily established, it is better, in order to avoid sacrificing a living embryo, to delay the operation until the first indications of miscarriage appear.

Rupture of the Uterus.

PUREFOY, R. D. "Clinical Reports of Rotunda Hospitals for One Year, Nov. 1st, 1898 to October 31st, 1899." *The Dublin Journal of Medical Science, May, 1900.*

This grave accident was encountered in two cases during the year, both instances being of an exceptional nature.

A primipara, aged 34, passed through an apparently normal labour of eleven hours duration, delivering herself of a child weighing 7½ pounds. Immediately before birth there were a few severe pains, but these did not

appear to cause undue distress. The placenta came away twenty minutes after the child, and but little blood escaped with it, the uterus remaining firmly contracted. Abdominal distention began a few hours later, but was not accompanied with pain, though on pressure slight tenderness was found low down on the left side of the uterus. Temperature, pulse and lochia were normal. Next morning, on making a uterine examination, the cervix was found not to admit two fingers, so the cavity was explored with a Bozemann catheter without detecting anything abnormal, though a rupture was suspected on account of the escape of a small quantity of blood-stained serum. On the third day the temperature began to rise, and on the evening of the fourth day ran up to 105° F., the pulse to 160, when she died.

Post-mortem, a complete rent was found in the left lateral wall of the uterus just within the os internum. There was a quantity of blood-stained serum in the peritoneal cavity ; the uterus was well contracted.

The second case, a IX-para, aged 32, was delivered of a macerated fœtus. Severe uterine pain was complained of in the evening, to quiet which opium was given. The following morning the fœtus was found in the vagina, where it was delivered with gentle traction. The placenta followed soon after, but was accompanied with considerable hæmorrhage. A Bozemann catheter introduced into the cervix passed into the abdominal cavity. On examination the finger could be passed through a rent in the left lateral wall of the uterus, through which appendices epiploicæ prolapsed into the vagina. The uterus was lying on the right side and was well contracted. The appendices were returned and iodoform gauze strips passed through the rent into the abdominal cavity. That night the temperature rose to 102° F. Next afternoon a portion of gauze was withdrawn and a vaginal douche of sterilized water given. The gauze was completely removed on the third day and the convalescence was without any further incident.

Placental Transmission.

Dorland, W. A. Newman. "Placental Transmission." *The Amer. Gyn. and Obstet. Jour., June, 1900.*

After a careful review of the recent literature on this subject, Dorland has prepared a most interesting and instructive paper.

That certain drugs and poisonous substances may be carried to the unborn fœtus through the maternal blood, is an established fact. Morphine has been detected in the blood of the placenta and umbilical vessels taken from a parturient morphinomaniac. Mercury shows great affinity for the placenta ; lead and copper tend to accumulate in the fœtal tissues, while arsenic has been found chiefly in the fœtal skin.

Thus copper and lead seldom produce abortion, but they lead to the

death of the fœtus before birth. Mercury and arsenic tend to produce abortion by giving rise to placental hæmorrhage. Potassium iodide passes very rapidly into the fœtal circulation.

Certain diseases existent in the maternal system find ready access into the placental circulation. Scattered clinical observations have been confirmed by experiments upon gravid animals, and the results so far obtained are highly interesting. The typhoid bacillus has been noted by many observers in the placental blood and in the fœtal tissues. In all the cases reported, no macroscopical lesions of the fœtal organs were discoverable though large numbers of bacilli were present. Etienne supposes that death results from blood poisoning due to a large dose of the bacillus before local changes can take place. Freund and Levy are of opinion that characteristic lesions are not found because the functions of the fœtal organs have not been established; hence they remin inert in the pathological process. The conclusion reached is that typhoid fever can undoubtedly be transmitted to the fœtus, and usually with disastrous results. On the other hand the fœtus may survive, though manifesting evidence of the disease.

Variola, scarlet fever, measles, erysipelas, recurrent fever, anthrax, tuberculosis, and syphilis, may be transmitted through the placental tissue to the fœtus, and usually with disastrous results. Intra-uterine infection with the diplococcus pneumoniæ of Fränkel has been noted by many observers. Notwithstanding the presence of the germs in the fœtal tissues, the specific lesions of pneumonia are generally absent in these cases. Streptococcus infection of the fœtus in utero has been reported by many observers. No lesion of the placenta was discoverable in any of these cases.

Infarcts of the Placenta.

Williams, J. Whitridge. "The Frequency and Significance of Infarcts of the Placenta Based upon the Microscopic Examination of Five Hundred Consecutive Placentæ." *Amer. Jour. of Obstetrics, June, 1900.*

This interesting paper embodies the results of a careful macroscopical and microscopical examination of 500 placentæ with the object of ascertaining the significance and mode of origin of placental infarcts.

Williams distinguishes five varieties of these placental infarcts:—

(1) Small, whitish or yellowish, fibrous areas, occurring on the fœtal or maternal surface of the placenta. These areas vary in size, while their thickness seldom exceeds a few millimetres.

(2) Areas in the placental substance which are wedge-shaped or irregularly round, dull white, and presenting a striated and fibrinous appearance, being sharply marked off from surrounding tissue.

(3) This same process involving one or more cotyledons, and connecting them into dense white fibrous masses.

(4) The condition known as "placenta marginata," which consists of the presence of a band of whitish or yellowish material around the margin of the fœtal surface of the placenta.

(5) Pinkish or brick dust-colored masses, irregularly shaped, more or less solid, and sharply marked off from the surrounding tissues. These are usually most marked on the maternal surface but may extend through the entire thickness of the placenta. These masses are usually termed red infarcts.

Infarcts of one or other of these varieties were found present in 315 out of 500 consecutive placentæ (63 per cent.) Williams concludes that the primary cause of infarct formation is an endarteritis of the vessels of the chorionic villi. This endarteritis results in a coagulation necrosis of the portions of the villi just beneath the syncytium with subsequent formation of canalized fibrin. As the process advances the blood in the intervillous spaces becomes coagulated, and thus groups of villi are converted into masses of fibrin.

"Moderate degrees of infarct formation possess no pathological significance and exert no influence upon either the mother or fœtus and are to be regarded as a sign of senility of the placenta, analogous to the changes which takes place in the villi of the chorion læve at an earlier period.

Williams considers that marked infarct formation, which results in the death or imperfect development of the fœtus, is usually associated with albuminuria on the part of the mother, though no satisfactory account of the relationship between them is apparent. He considers that there is no evidence of the bacterial origin of infarcts.

Pernicious Jaundice in Pregnancy.

JEANNIN. "Icterè aggravé a la fin de la grossesse—Mort de l'enfant pendant travail—Mort de la mère après l'accouchement." *Bulletin de la Société d'Obstetrique de Paris, No. 5, 1900.*

The patient, a primipara, aged 28, eight and a half months pregnant, was admitted to the Maternité in labour. Four days before her admission, having previously been in good health, she was seized with severe abdominal pains and headache. The same day a slight icterus developed. Her general condition remained good and there were no irregularities of the digestive functions present at this time. On admission, the woman was pale and jaundiced. The rectal temperature was 36° C., her general condition bad, her lips dry, and her tongue heavily furred. The fœtal heart sounds were absent. The os being completely dilated, she was rapidly delivered by forceps of a lifeless, male child weighing 2600

grammes. The placenta followed shortly afterwards and was normal with the exception of a distinct icteroid tinge.

The night following her delivery the patient was seized with a convulsion characterized by disordered movements of the extremities and by jactitation, and altogether differing from an ordinary eclamptic seizure. By catheter, 250 grammes of bile tinged urine was withdrawn. It contained but a mere trace of albumin. The patient remained in a state of coma with subnormal temperature, and died 33 hours after her delivery.

Post-mortem, the liver was found to weigh but 827 grammes; its consistence seemed about normal. On section, it presented no microscopical alterations. Hystological diagnosis was acute infectious changes grafted on a chronic cirrhotic liver. The spleen was small, 220 grammes, and appeared normal. The kidneys, the right weighing 157 and the left 170 grammes, were white and glistening. The cortical substance had almost disappeared and what remained was pale and yellow. The medullary substance was congested, and some commencing disorganization of the pyramids was apparent. Histological diagnosis—mild hæmorrhagic glomerulo-nephritis.

D. J. Evans.

Reviews and Notices of Books.

PROGRESSIVE MEDICINE: A QUARTERLY DIGEST OF ADVANCES, DISCOVERIES AND IMPROVEMENTS IN THE MEDICAL AND SURGICAL SCIENCES. Edited by HOBART AMORY HARE, M.D., assisted by CHARLES ADAMS HOLDER, M.D. Vol. I. March, 1900.

Professor Hare and his able staff of coadjutors have succeeded in placing an admirable and readable volume in the hands of the medical profession. The various articles are from the pens of men who have proved themselves thoroughly competent to treat their various themes, and the work reflects much credit on their industry and ability.

The surgery of the head, neck and chest, by Dr. J. C. DaCosta, treats of a large variety of subjects. In removal of the tongue for cancer Cheyne believes the mortality can be somewhat lowered by thorough cleansing of the mouth and tongue, and by preliminary injections of antistreptococcic serum. That even advanced disease of this nature can be successfully dealt with is shown by a case of Christopher Heath's, the patient living for twenty-three years without recurrence.

In purulent collections in the pericardium, Brentano resects the fifth costal cartilage under local anæsthesia, punctures the sac to ascertain the character of the fluid, incises the pericardium and in some instances sutures its edges to the skin. In purulent effusions DaCosta is inclined to think that irrigation with hot saline solution is advisable. This procedure has, however, proved unnecessary and even disastrous in empyema, and would seem to us to be unnecessary, even in purulent cases of pericarditis.

Dr. Frederick A. Packard contributes an interesting and instructive article on the acute infectious diseases.

Manfredi's observations on the influence of the lymph glands on microbism are summarised, and form an interesting study of their protective influence. The transmission of infectious diseases by insects is briefly referred to; the possibility of the spread of plague in this manner has a timely interest. Acute rheumatism is probably correctly placed among the infectious diseases, although not yet proved to be due to any special organism, as may be seen by a reference to the large number of organisms which have been regarded as its cause.

Advances in the means of diagnosis of the infectious diseases are well illustrated by references to typhoid fever, cerebro-spinal fever and measles. In typhoid Piorkowsky has described a method of isolating

the bacilli as early as the third day from the stools, and consequently several days in advance of the Widal reaction. If confirmed, this method will prove of much value in diagnosis. Neufeld's discovery of the bacilli in the rose spots, often preceding the appearance of the Widal reaction, is obviously not of any great practical value, as the appearance of the rose spots is conclusive evidence of the disease. Symptoms and treatment receive full consideration in this most progressive field of medicine, and we can only commend this section to our readers' perusal.

The Diseases of Children receive full attention at the hands of Dr. A. D. Blackader. Although the writer states that no striking advance has been made during the year, yet he has collected the best literature of the year bearing on the subject. Infant feeding, which was treated exhaustively in last year's edition, is briefly considered. A point of interest is that the great bulk of the bacteria are carried up in the cream. The necessity of sterilising cream for infants is thus a most important point, whilst the underlying milk, comparatively germ-free, is of less importance. The value of carbohydrates in an infant dietary receives confirmation from Keller's investigations, which go to show that these substances check nitrogenous waste.

To obtain sputum for examination in young children, two devices are described. Ebstein directs a curved forceps holding cotton wool to be pressed into the fauces after a fit of coughing, whilst Meunier recommends lavage of the stomach after the morning fit of cough. Among the rarer diseases of childhood, a case of aneurism in an infant of ten months is quoted, and an instance of scurvy in a six months' child, fed exclusively on breast milk of poor quality.

The other subjects treated in this volume are Pathology, by Dr. Ludvig Hektoen; Laryngology and Rhinology, by Dr. A. Logan Turner; and Otology, by Dr. Robert L. Randolph. These articles are all of a high class, but our space prevents a more extended notice.

A defect in the work appears to us to consist in dividing the main subjects among different volumes. We believe a wider sale might be obtained could the practitioner purchase one or two volumes, containing the subjects in which he is particularly interested, and thus obviate the necessity of loading his shelves with material which he will probably never read. We can, however, heartily recommend the work as one of the best annuals, giving in a comparatively brief form compass all the important work of the year. Another feature is the personal criticism of the various compilers, which greatly adds to the interest and value of the work.

F. G. F.

ENCYCLOPÆDIA MEDICA UNDER THE GENERAL MANAGEMENT OF CHALMERS WATSON, M. B., M.R.C.P.E., Vol. 1. Abdomen to Bone. Published by William Green and Sons, Edinburgh. Canadian Agents, J. A. Carveth & Co. Price, $5 per volume.

This work is designed to cover the whole range of medicine and surgery and of the various specialties, the different topics being arranged in alphabetical order.

The first volume contains a series of over fifty articles, amongst which are certain topics not usually treated in the ordinary text-books, *e.g.* Balneology and artificial limbs, and which will be found of much value for reference. The practical character of the work is evidenced by the introduction of articles on such subjects as the clinical examination of the abdomen, of the blood and of anæsthetics and anæsthesia.

Among such a large number of excellent articles it is impossible to refer to more than a few. Dr. Leech contributes an excellent and thorough account on asthma, dwelling fully and clearly on its pathology, symptoms and treatment. Dr. Byrom Bramwell writes on aphasia, a task for which his well known publications are a sufficient guarantee for the quality. Dr. Shepherd, who is the only cisatlantic contributor to this volume, gives an excellent clinical account of appendicitis. dwelling fully on the surgical treatment. All inflammations in the right iliac regions are regarded as having their origin in the appendix and the terms peri and para-typhlitis are regarded as confusing and superfluous. Other articles of interest in this volume are Abdominal Aneurism, by Dr. Dreschfeld; Alopecia, by Dr. J. Galloway; Thoracic Aneurism, by Dr. G. Steel; Anæmia, by Dr. Lovell Gulland; Angina Pectoris, by Dr. L. Brunton, and Diseases of Bone, by Alexis Thompson.

As a work for convenient reference the encyclopædia can be recommended as thoroughly reliable. Whilst the pathological aspects are capably handled, the articles are thoroughly practical and bear the stamp of mature judgment and experience. They are tersely written, clearly expressed and free from the verbosity that mars and impairs the usefulness of so many medical publications. We believe the work will fill a want in medical literature, and can cordially recommend it to those of our readers who are anxious to have authoritative and easily available information on their library shelves.

The book is well printed in clear type and on good paper, and is neatly bound in cloth.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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VOL. XXIX JULY, 1900. No. 7.

CANADIAN MILITIA ARMY MEDICAL SERVICE.

It is with a great deal of satisfaction we note that the Medical Services of the Canadian Militia is organized in its initial stage upon a good foundation.

The service as it at present exists consists of two distinct branches :—

(1) Militia Army Medical Staff Service which consists of (*a*) Militia Army Medical Staff and (*b*) Militia Army Medical Staff Corps.

(2) Regimental Medical Service.

The Militia Army Medical Staff Service consists of a Director-General stationed at Head-Quarters, Ottawa, who has complete supervision of all the officers of the staff and officers under him who are under his command, and exercise medical supervision in the positions allotted to them. It comprises also the whole of the officers (*personnel*) required for the Bearer Companies, Field Hospitals and medical administrative duties. The Militia Army Medical Corps consists of the non-commissioned officers and privates (*personnel*), specially enlisted and allotted to the Bearer Companies and Field Hospitals.

In accordance with the Royal Warrant of the 23rd of June, 1898, the officers of the Militia Army Medical Staff have combatant rank, and

the promotion of officers takes place on the same principle as that in a regiment or corps. The titles of lieut.-colonel, major, captain and lieutenant are employed to denote the several ranks of office. They administer discipline and have the same prerogatives as those of the regular force.

The officers of the Regimental Medical Service retain their compound titles, surgeon-lieutenant, surgeon-captain or surgeon-major. Promotion in the case of Regimental Medical Officers is subject to qualifying examinations. Upon first appointment the regimental officer must be (1) qualified as a medical practitioner according to law, (2) he must also pass examinations on (*a*) regimental duties and discipline, (*b*) infantry drill (squad and company) (*c*) regulations for army medical services. A further examination, an extension of the foregoing, must be passed before promotion to the rank of surgeon-captain or surgeon-major.

On the other hand all appointments to the Militia Army Medical Staff are provisional until a satisfactory examination has been passed upon the following subjects :—(1) Infantry drill. (2) Manual for the Medical Staff Corps. (3) Military hygiene. (4) Routine and duties as laid down in the Queen's and Medical Regulations. (5) Military law. (6) Equitation.

In order to enable officers to qualify, classes will be formed in the centres of the different military districts and camps of instruction, and a course of instruction carried out under qualified instructors. In lieu of this course, certificates of proficiency are accepted from the Royal Army Medical Depot, Aldershot, England, or the Volunteer Ambulance School of Instruction, London, England. Officers who have served with an army in the field as medical officers may also be considered eligible.

Under the title Army Medical Corps is included, (1) Bearer Companies, (2) Field Hospitals. The *personnel* (peace) of a Bearer Company consists of one major, two captains or lieutenants, one sergeant-major, one quarter-master sergeant, one compounder, four sergeants, four corporals, one bugler and twenty privates, four forage carts, one water cart and ten ambulances. In war, the strength of the Bearer Company is increased by additional privates to a total of sixty-one non-commissioned officers and privates. The Army Service Corps adds thirty to the number and forty-five horses for transport.

The *personnel* (peace) of a Field Hospital consists of one major, two captains or lieutenants, one sergeant-major, one wardmaster (staff-sergeant), one cook (corporal), one clerk (corporal), and fourteen privates or orderlies and servants. In war, the strength of a field hospital is increased by one additional officer and twenty privates. The transport of a Field Hospital is provided by the Army Medical Corps, and consists of one forage cart, one water cart and four general service waggons.

The regimental medical officer is allowed two men per company wherewith to form a regimental stretcher-section. The men are instructed by the medical officers in the method of rendering first aid to the wounded. The duties in action of the two branches of the medical services are quite separate and distinct. The regimental officer with his stretcher service follows his regiment into action leaving the wounded, who have received first aid in the field, and who are picked up by the stretcher-section of the Bearer Company and carried off the field to what is known as a collecting station. Here all the ambulances are stationed and by them the wounded are transported to the dressing station, where the very urgent cases are temporarily dressed and afterwards transported by means of the ambulance waggons to the Field Hospital and there dealt with as occasion may require before being sent by train to the Base Hospital.

The uniform of the Militia Army Medical Staff and of the Army Medical Corps (bearer companies and field hospitals) closely resembles that of the Royal Army Medical Corps as it was previous to 1899, with the addition of a distinctive collar and cap badge, namely a maple leaf with the Geneva cross in the centre.

Regimental medical officers uniform themselves in accordance with the regiment to which they are attached, wearing the regulation cross-belt, sword-belt and head-dress of the Army Medical Staff.

The following Bearer Companies have been organized :—

No. 1 Co.....Head-Quarters Halifax.
No. 2 Co.....Head-Quarters Ottawa.
No. 3 Co.....Head-Quarters Montreal.
No. 4 Co.....Head-Quarters Toronto.
No. 5 Co.....Head-Quarters Quebec.

The following Field Hospitals have been organized :—

No. 2 Co.....Head-Quarters Kingston.
No. 3 Co.....Head-Quarters Montreal.
No. 4 Co.....Head-Quarters Montreal.
No. 5 Co.....Head-Quarters Quebec.

During this Session authority for organizing four additional bearer companies and four field hospitals will be given, and the task of detailing officers and recruiting for these units will engage the attention of the Director-General.

The enthusiasm shown for enlistment has been most marked in several centres where the number of applicants received has been far above the required numbers. In Montreal for example, was nearly fifty per cent. above the required strength. The bearer company for No. 5 Military District (Montreal), has been particularly fortunate in obtaining very suitable quarters in the University Gymnasium through the kindness of the authorities of McGill University.

The formation of a staff of nurses in connection with the Army Medical Service is contemplated and will doubtless be organized at no distant date, and it is reasonable to believe that those of the Canadian nurses who will return from South Africa will be among them.

H. S. Birkett.

THE SANITARY INSTITUTE, LONDON.

Conference in London on the Housing of the Working Classes, and Visit to Paris.

The Sanitary Institute of London, has arranged to hold a Conference on the Housing of the Working Classes at the Institute, and in connection with it an exhibition of models and designs will be formed in the Parkes Museum of the Institute. The Conference will be held at the end of July, and will continue for two or three days, probably those immediately preceding that on which the Sections of the Annual Meeting of the British Medical Association, which meets this year at Ipswich, begin (Aug. 1st). Papers will be read and discussed in the mornings, and visits to typical buildings will be arranged for the afternoons, and also demonstrations of the plans and models.

Plans and models coming under any of the following heads will be accepted :—

Unhealthy Areas and Improved Areas.

Urban Dwellings on the System of Self-contained Flats—Associated Flats—Family Houses—Poor Mens' Hotels—Common Lodging Houses —Shelters.

Suburban Dwellings.

Rural Dwellings.

Hop and Fruit Pickers' Temporary Dwellings.

Model Estates, Villages.

Models and Plans Illustrating the Application of Buildings, Acts and Regulations.

Silver and Bronze Medals will be awarded by the Institute for Improved designs.

The Sanitary Institute has also accepted an invitation from the Société Française d'Hygiène to hold a Conference in Paris on Tuesday, Wednesday and Thursday, August 7th, 8th and 9th. The date of the meeting has been so arranged that it will follow the Conference and Exhibition on the Housing of the Working Classes to be held at the Institute and the Annual Meeting of the British Medical Association, and immediately preceed the meeting of the International Congress of Hygiene and Demography in Paris. Matters relating to municipal sanitation and other sanitary work will be discussed in the mornings, the

afternoons being left free for visits, (which the Société Française d'Hygiène will arrange) to important sanitary works. The French Society will also provide a reception room for the members and associates of the Institute so that they may be able to meet together during their stay in Paris. Foreign guests wishing to join the Conference of the Sanitary Institute in London or in Paris, can obtain further particulars from Mr. E. White Wallis, F.S.S., Secretary. The Sanitary Institute, 74A, Margaret Street, London, W., to whom all communications should be addressed.

According to the *Australasian Medical Journal*, there are 902 registered medical practitioners in New South Wales, or about one practitioner to 1536 people.

At a meeting of the graduates of McGill University residing in Chicago and vicinity, a McGill University Alumni Association was formed, and the following officers elected :—

President, Dr. R. D. MacArthur; 1st Vice-President, Mr. Christopher McLellan; 2nd Vice-President, Dr. Leonard St. John; Sec.-Treasurer, Dr. T. A. Woodruff; Councillors, Drs. Wm. Copeland, D. R. MacMartin and J. Brown Loring.

The Royal College of Surgeons of England, in celebrating its centenary, has for the first time in its history, decided to confer the honorary degree of F.R.C.S. on certain representative and distinguished surgeons.

We heartily congratulate Sir William Hingston and Dr. T. G. Roddick, who have been chosen as two of the Canadian recipients of this highly prized title.

Obituary

CLARENCE CHURCH, M.D.

Dr. Clarence Church who recently died in Ottawa at the comparatively early age of 52, was one of the most widely and favorably known of the many graduates of McGill.

Soon after taking his degree in 1868, Dr. Church commenced the practice of his profession in the village of Ashton, County of Carleton, but finding this sphere too limited, removed to Ottawa in 1873. Here he soon commanded a large clientelle, and at one time had, with one or two notable exceptions, the largest and most lucrative practice in the Ottawa Valley. Among his patients were included, from time to time, some of the ablest statesmen of Canada, whose official positions made them residents of the Capital. Our lamented friend kept himself thoroughly posted in his profession, being a constant reader and an accurate observer. He was always eager to learn and adopt new and approved methods in both medicine and surgery. When his numerous engagements permitted, he never lost an opportunity of attending professional gatherings in Canada and the United States, and on two occasions crossed the Atlantic to be present at meetings of the British Medical Association. In 1897, he was unanimously elected President of the Ottawa Valley Branch of that association, and it will be remembered that one of the most pleasant outings connected with the Montreal meeting of the British Medical Association, in 1897, was a trip to the Capital at the invitation of the Ottawa Valley Branch. Dr. Church was one of the most prominent Masons in Canada and was considered an authority on Masonic matters. Being a direct descendant of a United Empire Loyalist, he was a Conservative of the Old Tory School, and on several occasions was offered a constituency in that interest, but persistently refused, having no desire to enter the hurly-burly of political life. His father, the late Dr. Basil R. Church, was for many years a member of the old Canadian Parliament. He was a delightful companion, being well read and well informed, besides possessing a large store of personal recollections and anecdote.

For two or three years previous to his death, Dr. Church had been in poor health, the result mostly of an accident which caused very severe general shock and permanent injury to one of his limbs. The immediate cause of death was valcular heart disease. He leaves a widow and four daughters to mourn his loss.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIX. AUGUST, 1900. No. 8

Original Communications.

ON THE EDINBURGH TRADITION AND OTHER TOPICS.*

BY

J. G. ADAMI, M.D.,

Professor of Pathology, McGill University.

I had recently forwarded to me by Mr. W. B. Cannon—a medical student of Harvard—an article published in the *Boston Medical and Surgical Journal*, detailing what the writer regarded as an ideal method of teaching medicine.† The main feature of this method, and one that I must confess is attractive, is the application to medicine of the Harvard mode of teaching law. At Harvard instead of there being a course of lectures and quizzes upon the different branches of law, the heads of the different departments distribute written or printed statements of actual cases and by a certain day certain of the students are expected to have turned up or ferreted out the authorities bearing on the subject and are expected to argue the matter, pro and con, before the class. In short, the method is but a putting into practice during student days of what, if he does not sink to the level of a scrivener or lawyer's clerk, the law student will be called upon to do each day of his legal career.

You can understand the stimulus that this must be to the keen student. There is no longer the wearying grind at eviscerating and memorising text-books and lecture notes, but in its place an actual living study of the law. Mr. Cannon proposes a somewhat similar plan in medicine. "Do away," he would say, "with didactic lectures; in their place let the quondam lecturer distribute carefully compiled notes of actual cases, with clinical history, symptoms, course of the disease and treatment all noted; then let the student go to the library and diligently work away until from the data given he has made out his diagnosis; until he is able

* Being the Presidential Address delivered before the McGill (Undergraduates) Medical Society, April 13th, 1900.

† The Case Method of Teaching Systematic Medicine, *Boston Medical and Surgical Journal*, January 11, 1900.

from the authorities to substantiate that diagnosis, to discuss the treatment and prognosis, and to stand before the class and hold his opinion against the criticisms of his confreres and his professor.

In place of the haphazard study of cases as they happen to come into the wards, it would by this means be possible to group together cases of like nature and to give to the study of case reports, a systematic and progressive form, introducing thus that right perspective and appreciation of relative values which is the most important advantage of a course of didactic lectures.

It is distinctly an attractive scheme. The student finds himself puzzling—as daily he should find himself when he gets into practice—over the meaning of symptoms, their correlation, the treatment of disease and so on, instead of receiving instruction, and like the bird in the nest having his pabulum forced down his capacious maw by his elders. Under the guiding care of these elders he passes to the higher stage of fending for and feeding himself. In short, he learns how to extract the worm artfully and scientifically without either breaking it or dislocating his tail feathers.

This is Mr. Cannon's main idea. There are it is true some valuable garnishings in the shape of clinical lectures in the hospital amphitheatre, out-patient work and so on, which further complete the scheme.

Now, remembering that Harvard at the present moment is the educational centre of the United States where some of the most advanced and most interesting experiments in medical pædagogics and education are being carried out, it is safe to infer that in this article of Mr. Cannon we have what is regarded as a very great advance upon the methods now employed in the Harvard Medical School. But when we come to study this scheme a little more closely, we cannot but be struck by the fact that evidently at the present moment and in the supposed future as indicated by this scheme, the study of medicine is mainly theoretical and not practical—the young bird, that is to say, is given a picture of a worm and told to find out its name and how to extract it, just as at the beginning of the century when subjects were all too scarce, or, as is still the case I believe in Chinese medicine, the teaching of anatomy was, and is, by means of papier maché models and of diagrams, or as even at the present moment some unfortunates are supposed to be capable of embarking in private practice and attending the gentler sex in their moments of supreme agony after a course of extracting a leather doll from a leather model. Such and little beyond does this method resolve itself into. There is not a word said about the attendance in the wards and note-taking, from which I can only conclude that Boston is still in the unsatisfactory condition that used to be practically universal in the

States—the condition in which the medical student is debarred from entering the wards and there learning to study cases at first-hand.

I do not hesitate to say that it is just this studying of cases in the wards which has been the making of McGill, which has given our graduates their strong and assured position whenever they have gone into the States.

That I should dwell with so much force upon the value of ward work may surprise some of you, but you must not go away from here with the idea that I see no virtue outside of pathology, or that I believe that it is only by pathology that you will enter the heaven of good practice, of a practice which is honourable and ennobling, because the individual honestly feels that he consistently does his best. Rather, if I may digress for a moment, I strive to keep ever before me that my object as professor of pathology here, is not to train up a school of pathologists but to teach my subject to you who are to be practitioners, in such a way that thereby you shall be sounder practitioners ; to teach you not the minutiæ of individual diseased processes, but the principles which underlie those processes. In short, to train you in medical thought so that approaching a case in your student days, as in after life, you should be able to some extent to realise the meaning of the symptoms and the lesions which may be present, shall understand their relationship, shall be able to picture to yourself the disturbed condition in one or other organ underlying and causing the outward manifestations. My object, the object of all of us, is to aid in your development, not into automata, which happening upon a symptom or set of symptoms, immediately fit a sesquipedalian designation to the same and forthwith turn either to the recessess of your brain or to the last number of say, the Muskegon Practical Therapist, published by those distinguished wholesale druggists, Stark, Merkley & Co., to find therein the latest drug which is said to "touch the spot"—but into reasoning thoughtful physicians, who in the study of their cases as in the treatment of the same, employ succus cerebri as the first and greatest article of materia medica. And if at times it may seem to you that I go over deeply into certain apparently very secondary phenomena, don't think, gentlemen, that it is the phenomena themselves that I am after, but the principles they illustrate or elucidate.

And this—if I may continue to digress—I will say for pathology, as giving you an indication of its value to the student and the practicing physician. Take the great medical men of Great Britain who have died within the last few years—the giants of their generation—men who have overtopped all their contemporaries, and what do you find ? Well, gentlemen, it is to say the least instructive, that one and all, Andrew Clark, Paget, Roberts, Wilkes—and I could extend the list—at a time

when pathology was not the living subject it now is, first made their mark as pathologists and investigators. The greatness of these men one and all was founded upon pathology, the post mortem room, the laboratory and the museum and herein lay the secret of their power. In their knowledge of the actual appearances and relationships of diseased organs, they possessed a veritable X-Ray apparatus; recognising the outward and visible signs of disease, they had an immediate inward and spiritual vision of the diseased organs ; they looked beyond the surface and from their experience they were able to form a correct mental picture of the lesions present ; they knew surely from that same experience what associated lesions were likely to be present or to be developed, and armed with this knowledge, they fought, not with a hidden and distant, but with an unmasked and present foe, and in these days I need not advise you of all the greatness of the advantage that thus was theirs.

There is, I must confess, a considerable mixture of metaphors in these last few sentences of mine. However, you will grasp my meaning so let them stand. It is the fashion by-the-bye on the part of the purists to decry mixture of metaphors. I doubt though whether within certain limits the purists are not foolish in this matter. The object of language —of good language spoken or written—is not, save in the case of a diplomatist, to conceal thought, but on the contrary to translate vividly to the audience the ideas and sentiments present in the mind of the author. When Sir Boyle Roche of immortal memory rose in his seat and in his wrath in the Irish House of Commons to expose as he imagined a nefarious plot, had he been a purist and not an Irishman he might have stated —"Mr. Speaker, I smell a rat, I see him emerging out of the obscurity of his hole, but mark you, Mr. Speaker, I will exterminate the vermin," or "Mr. Speaker, I smell a smell, see the mephitic fumes beginning to ascend beneath our very noses, but mark you, Mr. Speaker, ere they rise further I will disperse them and ventilate this House," or again, "Mr. Speaker, it is a baneful flower that I smell, it is growing that I see it; see Mr. Speaker, it is about to open ;but mark you, Mr. Speaker, I will yet nip it in the bud." Had he used any of these metaphors he would have been as correct as a purist could desire and almost as unimpressive as the ordinary every day parliamentarian, for he would only feebly have conveyed his main idea to his audience. Who hesitates for a moment to understand, and be impressed by what he did say—"Mr. Speaker, I smell a rat, I see it floating in the air, but mark you, Mr. Speaker, I will nip it in the bud."

Although, gentlemen, as you may infer from my lectures, I regard pathology as of singularly great importance to the medical student, nevertheless it has to be recognized that the success of our school and of

those we have sent out into the world has not so much been due to it as to the teaching in the hospital wards, to the actual study of cases at the bedside. Of this I have no doubt, and it will be a bad day for McGill when the demands of special subjects lead you to neglect the great clinical opportunities we possess here in Montreal.

Now it is not that by this bedside teaching you gain the proper "bedside manner," important though that be. "If manners maketh man," assuredly manners maketh the medical man—in a social sense. It is not that. Indeed, at the present time in our hospital training, education in the correct bedside manner is inevitably too much neglected; that manner, if it is not natural to the individual, can only be learnt by example and not by precept, and the old apprentice system, provided that the individual student were prenticed to a gentleman, taught the right manner in a way that the hospital cannot do. The leisurely and incidental but constant study of the individual practitioner which the system necessitated, moulded the manners of the apprentice in a way which the hospital system with its rapid passage hither and thither, can never attain unto, save it be in the case of the house physicians appointed to an individual physician or surgeon. At most the hospital system has the advantage that one has the opportunity to select this or that physician or surgeon as an example and with this one as ideal to mould oneself after his fashion. I can recognise in many a Bart's man the influence of Sir James Paget, can see how they have modeled themselves upon him, so that from him they have given a tone to the whole school; and not to come too near home, I have thought to recognise the influence of one still active, and very near to the hearts, at least, of McGill men, on those who have been under him.

But, as I say, this is not the main benefit of walking the hospital aright; the main benefit lies in learning the "approach;" how to take a case in hand; how to elicit the history, and still more how to proceed in an orderly and thorough manner to examine the various systems one after the other. No amount of teaching or talking, no didactic lectures can teach you these; you must by hard practice learn to use eyes, ears, fingers and instruments on the living case.

And now the question comes, how is it that all these years so long as anyone still living can remember, and yet longer, Montreal has been employing these means, while elsewhere on the continent until recently thorough clinical instruction and the free entry of students into the wards have been most exceptional? The advantages of the system are so obvious that it is difficult to understand why elsewhere this ward teaching has not been universal.

In part, this may be due to the democratic air of the States,

though I rather doubt it. In the old country there is more keenly the feeling that hospital patients are charity patients and as such may be delivered over to the student at the hospital as a return in kind, as it were, for the benefits conferred. But that spirit is largely wanting here in Canada also. The patient would appear to enter the hospital as a right and while he permits examination he recognises no obligation on his part to submit to being studied and hammered and listened to by the tyro in medicine.

Something undoubtedly is due to the methods of conducting hospitals; most hospitals here have only secondarily become connected with medical schools and the governors of the hospitals have been opposed to the entrance of students into the wards upon the grounds of possible disorganization of the nursing system, of increased expense, and of fear of driving away patients and lessening the annual return of work done. Here in Montreal on the other hand, the founders of the Montreal General Hospital and earliest members of the staff were likewise the founders of the medical school, and as I shall point out, carried out the traditions of the training they themselves received in their youth, and arranged from the very start that the students should have entry into the ward. So too at the more recently founded Royal Victoria Hospital, one at least of the generous founders was, as Chancellor of the University, keenly interested in having the hospital closely connected with McGill and his daughter being married to the son of one of our late deans and one of the great pillars of support of our school, he was, and has for long been more especially interested in the Medical Faculty of the University.

And then thirdly and essentially the difference appears to me to be due to the fact that our Montreal school was developed by Edinburgh medical men, and from the first continued the Edinburgh tradition; or more correctly their scheme of teaching was upon the methods by which they themselves had been taught when students at Edinburgh. William Robertson, John Stevenson, William Caldwell and Andrew Holmes, who in 1823 formed the Montreal Medical Institution and who in 1829, when that institution became the Medical Faculty of McGill, themselves became the first professors in that faculty, were all Scotch. The Toronto school on the other hand was in the main founded by English graduates, and by those influenced by English methods, as were the older schools in the United States.

Prior to 1820, as you will find pointed out by Osler, in his memorable address delivered here before the British Medical Association, it was England rather than Scotland, or the European continent, which attracted the bright spirits from the United States to study in her schools after graduation—men who returning became the leaders of medical teaching

in the States. As Osler insists, John Hunter and St. George's Hospital especially influenced American medicine. One finds very few Macs among the earlier leaders of American medicine. I can only recall Ephriam MacDowell, the first ovariotomist, and he gained his inspiration, it may be added, in Edinburgh, but he was an isolated worker and for long a prophet in the wilderness, and Scotch influence was largely wanting. After 1820, came the period of French influence when Louis and the great French clinicians drew men to Paris; and only during the last third of the century has German influence been supreme. And neither in France nor in Germany even to the present moment is systematic ward work by students who are not graduates, regarded with favour.

Now, as Timothy Holmes points out in his life of Benjamin Brodie, himself one of the great names at St. George's Hospital, during the latter half of the 18th century and the first years of the 19th, there was nothing in London which deserved the name of a hospital school, or in fact was so regarded. When Pott taught surgery at St. Bartholomews, or John Hunter at St. George's, or Abernethy anatomy at St. Bartholomew's, their lectures were attended by scholars from all parts of London and elsewhere. It is true that in 1808 Wilson and Brodie entered into that partnership in the Windmill St. School—a private venture—which in '31, or more truly '36, developed into a complete school of medicine and surgery in direct connection with St. George's Hospital. It is true that from 1808 onwards the connection of the school with St. George's was very close, but it was not absolute until the latter year. It is true that London medical students "walked the hospitals long before the beginning of the century, but I cannot learn that any regular instruction was given in the wards until about 1808. Now from the middle of the 18th century there had been a well-developed medical school in Edinburgh with university professors in different subjects.

To give you an idea of how little could be gained in London bearing upon the conduct of a medical school, I would point out that Brodie and Keate in 1808 were the first hospital surgeons to attend daily and supertend all the cases in the wards taking notes of cases and discussing them freely with the students, and about the same date came the appointment of clinical clerks and the delivery within the hospital walls of clinical lectures. Herein, though Mr. Timothy Holmes does not mention it and speaks of Brodie as a great road-breaker in these matters, London was years behind Edinburgh, nay was copying the northern capital. In short, Edinburgh was years in advance of London in the most important matters of medical education.

I will not here enter into the development of the Edinburgh school and the Edinburgh methods, indeed I have not as yet worked this point

out to my satisfaction and have not yet determined whether the Edinburgh methods were original or whether, remembering how large a number of Scotch graduates came under the direct influence of the great Boerhaave and studied at Leyden, it was to Dutch influence that the advance was in the main due.

I did not realize how much we owe to Edinburgh in these matters until within the last few months, for it has been somewhat the custom to run down the Edinburgh teaching in medicine of the end of last century, and to regard that school as dominated by the abstract doctrines of Cullen. But a few weeks ago, looking through a collection of old manuscript notebooks we have in the library, my views about the Edinburgh teaching a century and more ago, underwent a complete change. For I happened there upon two notebooks of a certain John Rowand, the one of notes from Dr. Duncan's lectures on the practice of medicine taken down at Edinburgh in the season 1781-82, the other of cases treated in the clinical wards of the Edinburgh Hospital, 1780-2, with observations upon the cases by Dr. James Gregory and Dr. Francis Home, and it is this last which has been a revelation to me.

Clearly these are the carefully compiled notes of an Edinburgh medical student. I learn from a biography of Dr. Gregory in one of the London journals immediately after his death in 1822, that numerous notebooks of this nature were then in existence. Dr. Gregory's cases are of the period from November to March, 1780-1, Home's are of the following winter. There is a tendency to group together cases of the same nature occurring within a few weeks of each other, and preceding or more often following such groups of clinical cases there are clinical notes, and these contain references to the cases indicating that the writer had seen them in the wards. In short, the volume gives evidence that in the year 1780, there was already well developed in Edinburgh a system in clinical instruction with full instruction in note-taking (the volume in question contains the full notes of some 60 cases), and then again clinical lectures upon these cases within the infirmary. Of course you must remember that this was long before the employment of any instruments of precision, save the finger tips; there could thus in these notes be no temperature chart, no reference to percussion and auscultation; in short, they are what even the young student must regard as being lacking in many respects. But so far as they go and so far as the period will permit, they strike me as being remarkably clear and remarkably well arranged. Indeed, we have in them the foundation of our modern method, and a very good and sound foundation it is.

I don't think it will tire you if I read out to you one or two of these cases with the notes that follow them.

Richard Aldridge, æt. 22, a soldier, Nov. 30, 1780. Was attacked while in bed about 4 o'clock in the morning of the 29th with sudden violent convulsive motions of his arms and legs, grinding of his teeth and foaming at his mouth; at the same time he was frequently insensible, his eyes fixed, and his face turgid with blood. He continued in this state about 10 minutes. The fit gradually left him in a comatose condition and at this time he passed a considerable quantity of urine in bed, of which he was entirely ignorant. After three-quarters of an hour he became sensible and complained of a violent pain and confusion in his head, but could give no account at all of the coming on of the fit. He was so well after this as to do his duty on guard. In the morning he was attacked with another fit which seemed more violent than the former. He has had to-day 10 fits of the same kind, in one or two of which a quantity of bloody froth was discharged from the mouth. In other respects they were not so severe as the former. About 4 months ago he was suddenly attacked with a fit similar but neither so long nor so violent, and has not had any return since that period. Has taken no medicines. Was dismissed from the infirmary cured of swelled testicle.

(Now follow the notes of treatment in abbreviated Latin which I will expand for you).

Let there be cupping at the temples and 10 oz. of blood removed; apply emplastrum epispasticum to the dorsal spine; let him take one ounce of tinctura sacra and let an enema of tepid water be injected.

Dec. 1st, has had about 10 fits yesterday; came to himself about 4 in the morning and has had 9 fits since. Had a stool from the enema last night; no effect from the tinctura sacra which he took last night. Let him have decoction of tamarinds with senna, in doses at intervals of 2 hours; let him begin to take a drachm and a half of powder of valerian root three times a day. The cupping did not succeed well.

Dec. 2nd. 15 fits between 5 o'clock last night and 1 in the morning, constant stupor; stools and urine discharged in bed. Let blood be taken immediately up to one pound from the temporal artery unless syncope or convulsion occurs before this amount is removed. Cut off the hair and apply a blister to the head. Pulse to-day 96, full and soft.

Dec. 3rd. Was bled to about 18 oz. without any immediate effect, pulse in evening coming down to 56. Stupor then continuing, sinapisms were applied to his feet for six hours. Blister applied to his head has discharged well. No stools since yesterday morning; pulse to-day normal; skin cool; stupor much less; has had no fits since 5 o'clock yesterday morning. Repeat the sinapism at night and give of a decoction of tamarind and senna 12 oz. Take in the morning the powdered valerian root as previously prescribed.

Dec. 4th. Physic operated well, but his stools were discharged in bed.

Much high delirium last night with peculiar sparkling of the eyes. Calm at present and tolerably sensible. Gets up now to make his water. Skin very cool; pulse just 80. Continue the valerian powder. Give a bolus containing ten grains of camphor at bedtime.

Dec. 5th. Delirium continued till past midnight, but patient has been quiet since 2 in the morning; a little delirium since that time and more sleep. Pulse and appetite natural. Complained since last night and complains still of hemicranium. No sensible effect from the bolus except perhaps some sweat.

Repeat the bolus with camphor every other hour until four have been given, beginning at 2 p.m.

Dec. 6th. Pulse 66, soft and full. Took his draught at 11, fell asleep immediately afterwards, slept a good deal and has been quiet ever since. Says he has no remembrance of what has passed these three last days. No stool since the physic has done working. No appetite to-day. Let him take early in the morning every second hour cathartic sol. of crystals of tartar, 1½ oz., Glauber's salts, 1½ oz.

Dec. 7th. Fell asleep by times and slept till past 5 in the morning without his draught; no fits nor delirium. Suspicio quaedam fatuitatis. Physic has created great debility and vertigo on motion. Appetite poor. Let him take Peruvian bark 4 times a day.

Dec. 8th. Free from complaints of any kind. Dec. 9th. Convulsions. Dec. 10th. Dismissed cured.

I might give you notes of several other cases, but in doing this I should unduly take up your time. In all there is the same clear description of the cases and of the changes that have occurred under treatment —in nearly all, I may add, the same heroic resort to purging, vomiting, and sweating. To produce diuresis, Dr. Gregory acted a little more gently; indeed, he strongly recommended gin-punch for this purpose; just as, I may add, he strongly recommended small beer for the thirst in low (typhoid) fever, urging that it is both agreeable and "antiseptic."

Clearly these notes have been taken down from dictation. But evidently from them and from the clinical lectures which accompany them, the students were familiar with the patients in the wards. And even if dictated we have here a most excellent exercise in the right method of terse and clear note taking.

In this case recorded, Dr. Gregory, who by the way was not the author of Gregory's powders, seemed to have been a little puzzled as to whether he was dealing with epilepsy or hysteria, and to make sure he tried both depletion of blood, and so lowering the blood pressure in the brain, and that good old remedy valerian. But these extracts will, I think, clearly show you that if Cullen, who was professor of Clinical Medicine at Edin-

burgh, was theoretical, Gregory, who was professor of theoretic medicine, was a man of an essentially practical mind.

Looking up the history of the three professors whose case reports and lectures are contained in these two columns, it is interesting from their published works, to see that these notes were taken at a time when there was very active study at Edinburgh of case reports. Thus Francis Home, whom I have not quoted, but whose cases are contained in the volume along with Gregory's, was professor of materia medica in Edinburgh and in this very year, 1780, published a volume of clinical experiments, Histories (i. e. clinical histories), and Discussions. Duncan, whose lectures are contained in the second volume, was a prolific writer; certain of his works were translated into German and other languages; among them I find a volume of medical cases selected from the records of the Public Dispensary at Edinburgh and published there in 1778. Of this a Latin translation was published at Leyden in 1783.

Dr. James Gregory was also as you see enthusiastic with regard to case reports and was further a great teacher. As one of his biographers remarks, "We can never mention his name without the warmest feelings of gratitude for those never-to-be-forgotten lessons of which we feel the value more as experience becomes more advanced. The wisdom, the manliness, the learning without pedantry, the scorn and contempt of quackery and all the other recommendations of that great and accomplished teacher contributed for a long period to keep up the dignity of an Edinburgh degree and to maintain the proper rank of the physician." He came of rather a remarkable family; his grandfather had been professor of medicine in Aberdeen, his great-uncle was the celebrated physicist, the inventor of the reflecting telescope, and his father was professor of medicine in Edinburgh, and physician to the king in Scotland. Born in 1758 in Aberdeen, Dr. Gregory after studying in Edinburgh, studied a year at St. George's Hospital in 1773, returning to Edinburgh the next year, and after a medical journey through Holland, France and Italy, he in 1775 was made professor of the Institutes of Medicine at Edinburgh. In 1790 he became Cullen's successor as professor of clinical medicine, a position which he held until his death in 1822. He was not a great writer, his main work, which was for long years the text-book of Edinburgh students, was his Conspectus Medicinæ Theoreticæ, published in 1780, as a text-book for his lectures. His whole energy appears to have been thrown into his hospital and medical teaching, and you would do well to take out of the library the notebook I have referred to and from which I have quoted, to read his interesting discussions of cases and treatment, which I may repeat, are anything but theoretical.

In short, Gregory, Home, Duncan, and the other Edinburgh teachers at the end of the 18th century were those who trained the original staff of the General Hospital, and of our medical school here in Montreal. They brought with them from Edinburgh the methods of ward work and from the very origin of the McGill Medical school up to the present time we have continued along the lines which they laid down.

Personally, I believe that we could go yet further than we do at present, though in saying this I speak with considerable hesitation knowing that the hospital staffs are altogether too fully occupied and that many of you cannot be regarded as ideal scribes. It seems to me, however, that we could make the study of cases in the wards count more definitely in the marks for the final years. I would be glad to see students, not merely recording the history of cases but handing in along with their case reports, short discussions upon some given topic in connection with each case—upon the diagnosis, or it might be upon certain special features in connection with the individual case, or again upon the results of treatment ; and I would be prepared to see certain of the younger members of the staff appointed by the University to give special instruction at the different hospitals in note taking, as well as to read over and criticise the notes and essays handed in. This may, however, seem a counsel of perfection and impossible of realization in the immediate future. In the meantime let me urge upon you to recognize the great value of this ward work and let me once more say that it is this which has given our school its peculiar standing upon this continent and only by our keeping and developing this ward work shall we keep and develop our standing as a medical school, and will you as alumni of the school develop your individual standing in practice.

THE PATHOLOGY, DIAGNOSIS AND TREATMENT OF PERFORATED GASTRIC ULCER.

BY

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The last quarter of the nineteenth century has seen marvellous advances in the different departments of what may be called intraperitoneal surgery. The most obvious and frequently present lesions, naturally, were the first to be recognized, studied, and systematically dealt with. Thus, appendicitis, cholelithiasis, the pathological lesions of the uterus and its adnexa, and the surgery of the small and large intestine, have now a well determined standing, and they are recognized and treated by symptoms and rules evolved from an increased knowledge of their pathology, and a large clinical experience. Most encouraging features of this work are its gradually extending sphere of usefulness and its lessening death rate.

The surgical treatment of gastric ulcer is of comparatively recent date. Interest in this field of work has been gradually increasing until, at the present time, the various problems arising out of a consideration of the causes and such complications as hæmorrhage, perforation of the stomach wall, subphrenic abscess, pyloric stenosis and adhesions, are being more carefully studied than almost any other. This statement receives confirmation in the fact that the time of the last meeting of the American Surgical Association in Washington was devoted almost exclusively to the reading of papers on the surgery of the stomach, and their discussion. This interest in gastric ulcer is fully justified by its frequency and mortality. Between four and five per cent. of the whole population of Germany suffer at one time or another, from gastric ulcer, writes Ewald, and he estimates the mortality to be from 1.23 to 13 per cent. According to Welch, the mortality is 15 per cent. of all cases, 6.6 per cent. dying from the results of perforation (Tinker). Leube treated 1000 cases in ten years (Tinker). "In the extensive post mortem records collected by Welch, ulcer cicatrized or open, was present in about 5 per cent. of persons dying from all causes. The scars are more frequent than open ulcers" (Osler).

It is my intention in the present papers to confine my remarks strictly to perforations of the stomach wall by simple, non-malignant ulcer. We

have now the reports of a sufficient number of cases to group together and from which to draw valuable lessons.

The first operation for perforated gastric ulcer was performed in 1880. Mikulicz was the operator. The patient died. The first successful closure of a gastric ulcer was in 1892, and Kriege the operator. From 1880 to 1896, a period of sixteen years, there were reported 78 cases. These were collected together by Weir and Foote from English, German and French sources. Keen and Tucker collected 78 cases operated upon during the following two years, 1896 to 1898. An analysis of both groups may be found in the Cartwright lectures delivered by Keen in 1898. Since then Tinker has collected and published a detailed report of 57 additional cases in his dissertation "Ueber die perforierenden Magengeschwüre und ihre chirurgische Behandlung," read in Berlin on 1st July, 1900. A translation of this with the reports of yet 16 cases more may be found in the *Philadelphia Medical Journal*, February 5, 1900. I am able to add 8 more cases, so that we have now before us, for study and analysis, 240 cases. The lessening of the death rate among the later series is very great. It has been reduced from 71.51 per cent. in the first series collected by Weir and Foote, to about 40 per cent. Mikulicz reported a series of 103 cases with 33 deaths, a mortality of about 32⅓ per cent. This represents the total mortality. If now we go further into the details of these cases we shall find some really startling figures.

And, first, as to the results obtained in early operations, say, within twelve hours of perforation, as compared with operations performed more than twelve hours afterwards.

Weir and Foote—

	Total.	Died.	Recovered.	Percentage of Mortality.
Under 12 hours	23	9	14	39.13
12 to 24 hours	17	13	4	76.47
24 to 48 hours	18	16	2	88.88
Over 48 hours	14	12	2	85.71
Not stated	6	5	1	
Keen and Tinker—				
Under 12 hours	26	5	21	19.23
12 to 24 hours	16	8	8	50.
24 to 48 hours	9	5	4	55.55
Over 48 hours	19	5	14	25.31
Not stated	8	5	3	

It is thus seen the percentage of mortality is only half as great in the second as in the first series, and that in both series it is twice as large in the second as in the first 12 hours' interval after perforation. And the results are still improving. In the last series of cases collected by Tinker, 19 cases came to operation within 12 hours of perforation, and of these 3 died, a mortality of 15.79 per cent.

The eight cases which I add to above series are as follows:—

Atherton	1	recovered.	
Kirkpatrick	1	recovered.	Personal knowledge.
Eve	1	recovered.	*Lancet*, 1900, Vol. I., p. 155.
Waitz	1	recovered.	*Deutsche Zeitschrift für Chirurgir*, Bd. LIV., 589.

and four cases which I have operated upon myself, of which one died and three recovered. These eight cases give a mortality of only 12.5 per cent., the fatal case being operated on 32 hours after perforation.

During the past five years there have been operated on in the Montreal General Hospital six cases of perforated gastric ulcer. All the cases operated on during the first 24 hours after perforation recovered. The late Dr. Kirkpatrick operated on two of these cases successfully. I operated on four, three of these successfully. The fourth case was that of a young girl who refused operation until 32 hours after perforation. The opening was found and closed, but the patient succumbed to the toxæmia of a general peritonitis. This is a very good result to have obtained, considering the nature of the cases that we had to deal with, as will appear later on. I have no doubt that other Canadian hospitals can show equally good results. Our success in the Montreal General Hospital is largely due and the credit should be largely given to the physicians who made the early diagnosis and promptly sent their people to the hospital. In no other way can one account for the lack of success in such an hospital as the Massachusetts General, where only one case has been saved out of ten. (Richardson, *Philadelphia Medical Journal*, Feb. 3, 1900.) Finney reports that they had but one case in the Johns Hopkins Hospital, and that that case died on the table (*Brit. Med. Jour. Epitome*, June 2, 1900). The mortality without operation is estimated at about 95 per cent.

Now, as to the site of perforation in operated cases; considering all the cases together, I find that the perforation has been on the

Anterior wall in	125 cases.
Posterior wall in.	32 cases.
Near the lesser curvature in	61 cases
Near the cardia in.	74 cases
Near the pylorus in	40 cases

These figures are in striking contrast to the figures of Welch, who found that of 793 post-mortem cases of gastric ulcer they were on the

Anterior wall in	69 cases.
Posterior wall in	235 cases.
Lesser curvature in	288 cases.
Near the pylorus in	95 cases.
Near the cardia in	50 cases.
Greater curvature in	27 cases.
At the fundus in	29 cases.

(Osler, Practice of Medicine, p. 479.)

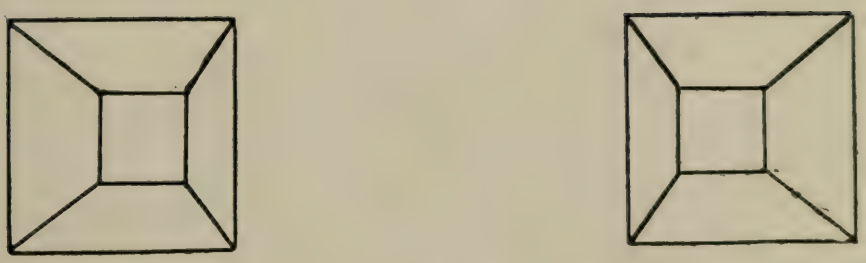
A possible explanation of the greater frequency of perforation on the anterior wall and at the cardia, may be the occurrence less frequently in these regions of protective adhesions. In fact, the adhesions between the base of the ulcer and neighbouring tissues play an important rôle in the history of peptic ulcer.

"In rare instances adhesions and a gastrocutaneous fistula form, usually in the umbilical region. Fistulous communication with the colon may also occur or a gastroduodenal fistula. The pericardium may be perforated, and even the left ventricle. Perforation into the pleura may also occur. It is to be noted that general emphysema of the cutaneous tissues occasionally follows perforation of a gastric ulcer." (Osler, p. 479.) No doubt, in many cases, adhesions result practically in a sort of cure by preventing the escape of stomach contents.

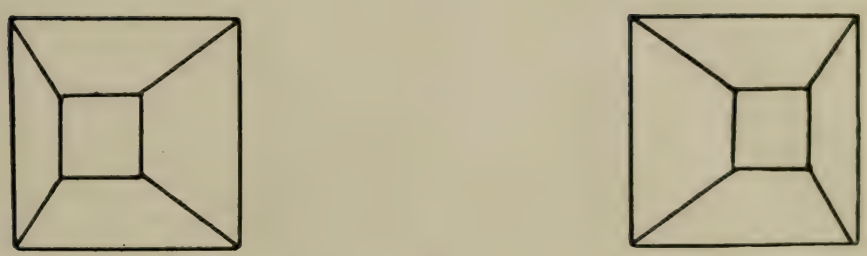
Again, several cases have been reported of more than one perforation and death has resulted after operation, from the second perforation not having been recognized, or a second ulcer, existing at the time of operation, has perforated later on during convalescence.

Tinker (*Phil. Med. Jour.*, Feb. 5, 1900, pp. 258) states, after examining 232 cases, that "more than five-sixths of the cases occur among women. About three-fifths of the cases among women occur before the twenty-fifth year, and mostly among the servant-girl class. On the other hand, only about one-twelfth of the cases among men occur at this age, while more than one-half of the patients among men were more than forty years old. The youngest patient was nine, the oldest seventy-one."

Into the subject of etiology and morbid anatomy of gastric ulcer I will not enter. The pathology of peptic ulcer is still involved in more or less obscurity. One very interesting point, however, I would like to draw attention to. I well remember the first perforated gastric ulcer I ever saw. The patient was a nurse in the Western Hospital, and had been going about performing her duties in a satisfactory manner until within forty-eight hours of her death. She had, however, complained



A



B

The above cuts illustrating Dr. Girdwood's paper on "Stereoscopic Vision" were inadvertently left out of the July number.

They should be inserted to face page 506.

somewhat of dyspepsia and was anæmic. No operation was performed, but at the autopsy there was found a large round hole in the anterior wall of the stomach as large as a silver half-dollar. The edges were very little thickened, smooth and regular. The first case that I operated on presented a very large hole in the anterior stomach wall. When I opened the abdomen, there escaped a quantity of gas, serum, and stomach contents. On bringing the stomach forward, a small opening was seen, through which gas escaped. After adhesions to the left lobe of the liver had been separated, the opening appeared large enough to admit the end of the finger, and the walls of the opening were at least an inch in thickness. This thick wall was found to be made up almost altogether of lymph. It would not hold sutures, and I found it necessary to separate it from the stomach wall. When this was accomplished and the edges of the opening into the stomach were laid parallel with each other for suturing, the opening measured just three and a-half inches. The only explanation of this appears to be that adhesions had formed between the stomach wall and the left lobe of the liver before perforation became an accomplished fact, and that conservative adhesions had gone on forming at the same time that the ulcerative loss of substance had continued in the stomach wall; and the symptoms of perforation only occurred when the inflammatory process failed to effect a closure. It is in this way, I think, that the large openings sometimes reported can be accounted for.

Diagnosis.—Nearly all patients giving evidence of perforated gastric ulcer give a history of indigestion, gastric distress, or hæmatemesis, extending over a longer or shorter period. There are exceptions to this general rule, however, which one case, which I will report presently, illustrates very well; so that the absence of a history of stomach trouble should not be allowed to have too great weight.

The first symptom to indicate the occurrence of a perforation is pain. Pain may be called the danger signal, and should always receive most careful attention from the attending physician. The mere fact of there being pain in the abdomen is not diagnostic of anything. Pain in the abdomen, as elsewhere, derives its importance from its associations. Tenderness on pressure is the next symptom of importance. These two, if properly studied, will generally give a pretty good indication of the locus of the disturbing element. If the pain is found to be of maximum intensity in the gastric region, to be referred to the left along the left costal border or through to a point in the back just behind the stomach, and if associated with marked tenderness over this region, the physician's suspicions should be thoroughly aroused. If now there be found to be nausea or vomiting, and if these three symptoms, pain and tenderness

in the epigastrium and vomiting, be found associated with disturbance of temperature and pulse, the diagnosis of a perforated stomach may be made with a very considerable degree of certainty, more especially if these symptoms occur in a patient giving a previous history of stomach derangement.

The real difficulty, however, is not so much a question of fine, exact, differential diagnosis, in which the most experienced and astute practitioner may err, but in carelessly and without much consideration assuming that the pain is due to indiscretion in diet or to colic, in the loosest sense in which that loose word may be used. A dose of opium or a hypodermic, and locally heat or cold, are quickly ordered, and soon the condition of the patient is so altered and masked that only time can make it clear.

Lastly, a few words as to treatment. As already stated, the mortality from perforated gastric ulcer, not treated surgically, is estimated at 95 per cent. Let us look for a moment at the causes of death in the reported operated cases.

The first cause of failure in saving the patient has been failure in finding the perforation. In the first series of 78 cases reported by Weir and Foote, the perforation was not found in sixteen. In the second series of 78 cases of Keen and Tinker, the perforation was not found in nine; and in Tinker's series of 76 cases, it was not found in four. This defect in the treatment thus is gradually disappearing.

Another cause of failure is the non-recognition of other perforations or ulcers likely to perforate later on.

Hæmorrhage has occasionally been the cause of death. This may perhaps be avoided by not attempting to resect the edges of the ulcer, by having due regard for neighbouring vessels, and by carefully removing the layers of lymph found around the margins of the opening, so that sound tissue may receive the sutures.

Pneumonia and pleurisy have caused death in a few cases. Peritonitis and toxæmia have been the cause of failure in many cases. This is best prevented by early operation.

As soon as the diagnosis is made with a fair degree of certainty, an incision should be made in the median line below the ensiform cartilage, the stomach brought forward, and search made for the opening. Adhesions should be freely separated. Failing to find an opening in the anterior wall, the gastrocolic omentum should be divided and the posterior wall examined.

When the opening is found, if it is sufficiently large, it is well to pack around carefully with gauze pads and wash out the stomach with steri-

lised, normal, salt solution. This washing secures to the operator a clean, dry field, and to the patient a considerable lessening, if not total relief, from the after nausea and vomiting. The hole in the stomach wall should then be closed by two or three rows of sutures. If the opening cannot be closed, a tube may be inserted and packed around with iodoform gauze. It has been recommended to stitch a layer of omentum over the suture line. I have never found this necessary.

The opening closed and the stomach replaced, the operator should most carefully cleanse, by washing with normal, saline solution, the space above the transverse colon. A small opening should then be made just above the symphysis and any fluid accumulated in the pelvis removed by washing, and by a drain inserted and retained as long as seems advisable. If general peritonitis is present at the time of operation, the general peritoneal cavity should be carefully washed out.

I have found it advantageous to give a little peptonised milk twenty-four hours after operation, if it is well retained, and to gradually increase it. At the same time I give by rectum, every six hours, a nutrient enema composed of two ounces of peptonised milk, one ounce of raw beef juice, one egg, and half an ounce of brandy. It is generally well retained, if not a few drops of laudanum are added. I try to move the bowels once each day by enema, and find none so effectual as a pint of soap and water containing twenty grains of bisulphate of quinine in solution.

The eight cases that I have collected are as follows:—

Atherton—One case; no details; recovered. This I believe was the first case in Canada.

Waitz—Female, æt. 25 ; operation 21 hours after perforation, which was found at the lesser curvature near the cardia. (*Deut. Zeitschr. f. Chirurgie*, Bd. LIV., p. 589.)

Eve—Female, æt. 38; recovery. Operation probably about nine hours after perforation. The opening was found on the posterior wall near the lesser curvature. (London *Lancet*, Vol. I., 1900, p. 155.)

Kirkpatrick's second case (one already reported)—Female, æt. 20; recovery; ulcer about middle of anterior wall.

Armstrong—Female, æt. 20; operation 22 hours after perforation; large opening in anterior wall of stomach; recovery.

F. D., female, aged 27. This patient was admitted to the Montreal General Hospital six hours after perforation. A diagnosis of perforated gastric ulcer was made, but she positively refused operation until 32 hours after perforation. This is the only fatal case out of the six that we have had in the Montreal General Hospital. She died of peritonitis. The opening was on the anterior wall, two inches from the pylorus.

My third case, J. B., male, aged 40, has a rather interesting clinical history. I saw him with his family physician, Dr. LeBlanc, on the morning of Oct. 28, 1899. He was then suffering severely from abdominal pain. I was told that in November, 1898, he had suffered from a similar attack, accompanied by yellow discolouration of the skin. His family physician had seen him during the night before my arrival and had given him hypodermically one-half grain of morphia, and applied hot fomentations over the abdomen. He had not vomited. His family history was negative.

At the time of my visit he was still suffering a good deal, notwithstanding his morphia injection, ½ grain in 5 hours. There was general abdominal tenderness of an extreme degree. I could not quite decide that the tenderness was greater in one part than in another, but thought that he was most sensitive over the rigion of the appendix vermiformis. He complained of the weight of the bedclothes. Muscular rigidity was most marked; nay, I may almost say that the abdomen was as hard as a board. Respiratory movements were entirely absent over the whole of the abdomen. Liver dulness was present and normal. No tumour mass could be made out. I had considerable difficulty in persuading him to come into the hospital for operation, but being ably seconded by Dr. LeBlanc, finally succeeded.

On his admission to the hospital his temperature was $96^4|_5°$ F., pulse 104, respiration 26. I operated 11½ hours after perforation. Thinking that the chances were that I had to deal with an appendicitis, I first opened the abdomen on the right side. Foul-smelling pus escaped. The border of the great omentum was covered here and there by loose layers of lymph. The appendix was found to be normal and removed. I then made an incision in the right semilunaris and exposed the gall-bladder, which was normal. No gall-stones could be felt. On examining the anterior wall of the stomach, I came upon a hole near the lesser curvature and about three inches from the pylorus. The edges of the opening were sharply defined. Closure was effected by three rows of sutures and the whole abdomen thoroughly washed out with sterilised, normal, saline solution. Drainage tubes were inserted above and below into the pelvis. Cultures made from the pus showed the presence of staphylococci. This man made a slow but perfect recovery and is now in good health.

My fourth and last case was a male aged 25. He was admitted to the Montreal General Hospital at 11 a.m., on the 30th December, 1899, complaining of severe abdominal pain. He stated that on the 25th of December he felt sick and went home from work early in the afternoon. He was at work again on the 26th, 27th, 28th and 29th, not feeling well

and suffering more or less from nausea. At 4 p.m. on the 29th, he was seized with severe pain in the epigastrium, accompanied by vomiting. He vomited three or four times, but no blood. He entered the hospital the following morning. Family history negative.

On admission his temperature was 98° F., pulse 95. He was anæmic. There was present a board-like rigidity over the whole abdomen, which was motionless, the breathing being entirely thoracic. There had been no movement of the bowels for four days; the bladder was empty. Tenderness was acute and general; his expression haggard and anxious. An hour after admission his temperature had risen to $101\frac{1}{5}$° F., and his pulse to 104.

He states positively that he never suffered from any stomach trouble before the onset of the present attack except that fifteen years ago he suffered similarly for two days.

An examination of the chest discovered dulness and faint blowing breathing over back of the right lung from the spine to angle of the scapula. Sputum mucopurulent, green, thick, scanty, and tenacious.

Operation, 22 hours after perforation. In this, as in the former case, I could not decide where the lesion was most likely to be found. An exploratory incision was made, first in the median line below the umbilicus. The extraperitoneal fat was of a peculiar, jelly-like consistence and the peritoneum greatly thickened. When the abdomen was opened a greenish-yellow fluid poured out carrying with it masses of a cream-coloured lymph, and large masses of this greenish, jelly-like material. Over a great part of the coils of intestine the same jelly-like substance was found, and it appeared to be covered by a layer of epithelium. Fine blood vessels entered these masses from the intestinal wall.

After the abdomen had been thoroughly cleansed with sterilised, normal, salt solution at a temperature of 110° F., an intussusception was found a short distance above the ileocæcal valve. It was easily undone. The bowel above and below was normal. A second incision below the ensiform cartilage gave access to the anterior wall of the stomach, which was found perforated near to the lesser curvature and about $1\frac{1}{2}$ inches from the pylorus. This was closed in the usual way, and drainage provided for the upper and lower spaces.

This man made a good recovery but it was tedious. The pneumonia increased, and resolved very slowly. He left the hospital in good condition.

These last two cases afford a very good demonstration of the marked contrast in degree of virulence of infection from the stomach as compared with that from the small intestine or appendix vermiformis.

PREVENTIVE MEDICINE.*

BY

WM. BAYARD. M.D., St. John, N.B.

It has been deemed expedient to amalgamate the New Brunswick and the Maritime Associations for the present session, meeting—as they do—on the same day, and to require an address from one chairman, instead of one from each.

My friend, Dr. Christie—with his usual liberality—has conceded that privilege to me, for which, let me thank him, and you all for accepting me. Doubtless my age has exercised an influence in the selection, if so, it justifies me in the belief that you do not look upon me as a fossil to be placed on the shelf as an antediluvian relic. For this I also thank you.

Dr. Daniel—our Mayor—has already given you some words of welcome to our city. Let me echo all that he has said, and add that it is my belief that medical association produces an intellectual contagion, and creates in the mind of each member a certain degree of emulation, when he listens to the reading and discussion of a good paper. Indeed, I will go further, and say that without association and discussion few can, or will, keep pace with the immense progress in medicine of the present day.

Our social gatherings have created a brotherly love among us, which compares very favourably with that which existed in my early day, when special medical associations did not exist. I was at that time (1837) one of eight, while I am now one of nearly seven times that number. Competition has vastly increased, yet, I am proud to say, the noble precept, live and let live, has been obeyed. Nevertheless, if competition continues to increase in the same ratio without a corresponding increase of population, we will in the end be driven to embrace some other calling.

Before proceeding with my subject, let me perform a melancholy duty in paying a passing tribute to the memory of three of our members, Dr. Bruce, Dr. McFarlane, and Dr. Coulthard, taken from us in the prime of life to that bourne from whence none return. All men of standing in our profession, it was my privilege to be associated for many years with one, Dr. Coulthard, as a member of the Provincial Board of Health, and I can say in all sincerity, that the urbanity, the ability, and the integrity with which he conducted his work, commanded the respect and the esteem of his *confrères*.

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* Delivered before the Maritime Medical Association, St. John, N.B., July 18th 1900.

It has been my privilege to address you so often that I find it difficult to select a subject that will command your interest. Revolving the matter in my mind, my experience tells me that, while the members of our profession live by ministering to the sick, to their credit be it said, they are ever found initiating, urging, and enforcing the recognized measures for the prevention of the calamities, sickness and death.

With this belief in my mind, I propose offering you a few remarks upon "Preventive Medicine," particularly including that dreadful white plague of the civilized human race, tuberculosis.

The conception that disease can be prevented is of modern times, say the last 60 years. An increased knowledge of the causes of disease has largely aided the power of prevention. While it is true that the Mosaic laws enjoined cleanliness, isolation of the sick, and wholesome food and drink, England may be classed as the mother of hygiene, and her precepts and example have been largely followed by all civilized nations.

Microscopy, bacteriology and close observation, have established a new era in preventive medicine, revealing to us the causes of disease, and thereby immensely aiding our diagnosis. Medical evolution has kept pace with intellectual development, and it would require the pen of a medical genius to portray the good that has been accomplished by preventive medicine during my time. And those who follow me may live to see verified Pasteur's prediction, "That by a process of vaccination or immunization it may soon be possible for man to eradicate every contagious disease from off the face of the earth."

To prevent disease, its cause should be known; I need not tell you that disease is a departure from a certain assumed standard of health, affecting a part or the whole of the body. A committee of the Royal College of Physicians, has divided all diseases into general and local:—General diseases, such as affect the whole frame; local diseases, such as occupy various parts of the body. There are 58 forms under the head of general diseases, and 843 varieties under that of local diseases. To these it adds 91 of other conditions of disease, and 155 forms of injuries. Of the whole, 33 are classed as infectious or contagious diseases. The result gives 1147 variations from health, to which the human family may be subjected.

So we may start with the great fact in our minds, that there are in detail before the scholar of the healing art, 1147 diseases and conditions of mankind, with the nature, the causes, and the prevention of which he must make himself more or less familiar. To accomplish this, he should have access to a correct registration of births, deaths and marriages, and I may add, of diseases and their symptoms, without which he can not arrive at sound conclusions.

Disease is costly to the individual and to the State, hence its prevention must be proportionately remunerative to both. This prevention is one of the absorbing problems of the day, appealing as it does to the philanthropist and the statesman; but both too often leave it to the physician to solve. It cannot be enforced without money. Yet, when the holders of the public purse are approached for means to prevent sickness and save life, they plead poverty and dole out grudgingly the minutest pittance, often accompanied by humiliating restrictions, to men who are gratuitously performing a public charity. This could not exist without the approval of the people, and it will continue to exist, until they are educated as to the value of preventive measures. Then, it is hoped, a wave of popular protest will be set in motion, proclaiming in unmistakable terms the maxim, *salus populi suprema lex.*

It has been estimated that sanitary measures save the lives of nearly 71,000 yearly in England. But much remains to be done, for Sir Joseph Fayrer informs us that about 125,000 persons die every year in England from preventable diseases, and we may assume a like proportion for this country. The consequent sickness causing that number of deaths would mean 78,250,000 days' work lost, with a money value of 7,750,000 pounds sterling.

Disease appearing in an epidemic form in a community is the best educator, inasmuch as it impresses upon the mind of all the fact that those living in filthy and impure districts suffer most severely. I can call to mind that when Asiatic cholera appeared in this city in 1854, this was exemplified in Sheriff street, Patrick street, and what was then called York Point, and in the environment of the Mill Pond, places too filthy for description. As an illustration of their state, I may mention to you that the next year, when a Board of Health was established, 554 tenements were found found without privy accommodation of any kind. Almost every other house in those districts had a pig in its attic; I recollect one that had out-grown his surroundings to such an extent that he could not be removed alive. Very many cows supplying milk to the inhabitants were found in dark and filthy sheds, with less than 200 cubic feet of air-space to each animal, instead of 2000.

At that time we had no means of forming an opinion of the mortality of a district, but in the districts named it was frightful; while in other parts of the town there were very few cases. Happily the sanitarian has banished that state of things.

The results of general application of sanitary measures are that the general mortality has, during the last 50 years, been reduced one-half. The individual longevity of man has increased more than 3 years, that of women 3½ years. The mortality of the British troops is only two-

fifths of what it was at the time of the Crimean War, among those in the East Indies one-third, and among those in the West Indies one-tenth. Dr. Parker, of London, has estimated that smallpox has diminished 95 per cent.; deaths from fevers generally have declined 82 per cent., deaths from typhus fever 95 per cent., deaths from enteric fever 60 per cent., deaths from scarlet fever 81 per cent., deaths from diphtheria 59 per cent., and deaths from phthisis 46 per cent. The mortality from surgical operations, has, through the teaching of Lord Lister, been reduced 20 per cent., the surgeon no longer dreading septicæmia, gangrene, etc., when in former times almost every other amputation resulted in death. It is estimated that the operation for ovariotomy has added 40,000 years of useful life to women in Great Britain, with a like proportion for other countries.

But there is another side to this picture. The mortality from cancer is double as large as it was 40 years ago, and it is progressing steadily. At first the increase was greater in females, now it is greater in males. Better diagnosis and more careful observation may account for a proportion of the increase, but not for the whole of it. Various theories have been offered for the increase, such as heredity, decline of zymotic disease, increased longevity, the decline of tuberculosis, increased prosperity, increased use of meat, alcoholism, and others I shall not stop to discuss, as none are by any means satisfactory.

Bacteriology has taught us that many contagious diseases are due to micro-organisms. Some at first believed that the organisms were the result rather than the cause of disease, until Koch in 1881, and subsequently, studied their history, and isolated and cultivated them. The 'cell theory' of the present day, was formulated by Virchow in 1858 He showed that every organism was composed of cells, and that every cell has an individual existence, a unity and purpose of its own. He contends that life is in a cell, and that life has no other origin than life.

When Jenner discovered the principles of vaccination, little did he think that his virus would become the forerunner of the antitoxins, and be suggestive of serumtherapy, immunity, and preventive medicine, and lead to organotherapy, and antisepsis.

Serumtherapy promises brilliant results, Richet claims that in 1889 he gave the first serotherapeutic injection. Behring in 1890 showed the effects of antitoxic serum on the fixed tissue-cells, and in 1892 he showed the results of serumtherapy in diphtheria, proving that its antitoxin has not only immunizing qualities, but is also a veritable remedy, in reducing the mortality from 47 to 8 per cent. Serum treatment has been adopted in many diseases with various results. The nature of immunity is an unsolved riddle, no satisfactory law has yet been formulated

for it. Why is natural immunity peculiar to some species, races, or individuals? We know that artificial immunity is secured by attacks of disease, by vaccination, by treatment with sterilized cultures and by treating susceptible animals with the blood-serum of immune animals, but we do not know how the immunizing effect is produced.

Heredity is a prolific cause of disease and degeneracy, hence the Sanitarian should give a warning note against injudicious marriage. It is true that marriage is often based on sentiment rather than upon reason. If intermarriage with those labouring under hereditary taint were restricted, we would not hear of the degeneracy portrayed by Billings, who informs us that in 1892 there were 7000 murders in the United States, 100,000 orphans, 106,252 insane, 95,571 imbeciles and idiots, 50,411 blind, 41,283 deaf mutes, and 86,000 prisoners. It has been claimed that from 65 to 75 per cent. of crime, imbecility, and insanity is due to heredity.

Now, I must claim the privilege of bringing under your notice that wide-spread disease tuberculosis, with the history, the symptoms, and the treatment of which, I well know you are perfectly familiar. My object in doing so is to enlist your aid in educating the 'masses' as to the best mode of preventing its ravages. To do this we must obtain the confidence and the co-operation of the victim; disabuse his mind of the too prevalent belief that his disease is incurable; impress upon him that it is contagious, and that by the non-observance of certain rules, he may not only increase his own disease but transmit it to his family or his neighbour.

The disease is always with us, stealing upon its victim like a thief in the night, leaving death and desolation in its path, and causing more deaths than any three diseases combined. It has occupied the master minds of the medical profession from the time of Hippocrates to the present century, yielding various views and theories, some supporting its contagious character, others that it is transmitted from parent to child; all admitting its deadly character, but none arriving at any positive conclusion as to its cause. This knowledge was reserved for Robert Koch, a German bacteriologist, who in March, 1882, announced to the world his discovery of the bacillus tuberculosis, a rod-like germ, as the cause, and declared the disease to be contagious. Other investigators have established the correctness of his statements. Armed with this information, it is now the universal belief that the disease is transmitted from man to man by the germs contained in the expectoration of a consumptive, by drinking the milk from a tuberculous cow, by eating the meat of a diseased animal when not properly cooked, and possibly by several other modes of conveyance.

There are many problems in this disease. It may be asked, why are the Jews far less susceptible to it than any other race? Why is the death rate of the negro and the Indian double that of his white brother? Why do goats, rats, and white mice, possess immunity, while cats, rabbits, field mice, pigs, and fowls, are susceptible? Why is the disease common in cattle, and rare in sheep and horses? Why do apes and monkeys contract tuberculosis so readily in confinement and never in their native wilds? Why do measles, whooping-cough and diabetes predispose to the disease? These are questions we are unable to answer.

It is needless for me to say to you that the bacillus tuberculosis is one of the smallest living organisms known to science, made up of a single cell, each growing and multiplying entirely by itself; each cell multiplies by its division into two, reaching its adult age in less than half an hour. This subdivision continuing, it is a simple arithmetical calculation to show that, starting with a single cell, there will be in 24 hours, no less than 17 million descendants of that original cell, and so light and small are they, that it would take 500 millions of them to weigh one grain, and it has been estimated that the expectoration from a consumptive, would yield in 24 hours 7 billion. These bacilli are possessed of great vitality, light and air have not the same effect upon them that they have upon other bacilli.

The germs are not transmitted by the breath, the expectoration must become dry and pulverized when it is disseminated through the atmosphere and inhaled. Having obtained access to the lungs, if the soil is suitable and if they are not destroyed by existing organisms, ultimately consumption is established.

Infection may be established by ingestion, as by the use of tuberculous milk and meat; by the saliva of a consumptive, as by kissing, the common use of the communion cup, by caressing domestic, pet animals having the disease, as dogs, cats, birds, etc. It may also be conveyed by inoculation, as by inserting the hand with an abrasion on it into water poisoned with tuberculous expectoration, by ritual circumcision, tattooing, etc.

As early as 1838, Carswell wrote, "Pathological anatomy has perhaps never given more decisive proofs of the curability of a disease, than it has given for pulmonary consumption." Goodhart, Charcot, Brourdel, and very many others corroborate this statement. The post mortem table has afforded ample proof of spontaneous recovery, by the existence of cicatrized lung lesions in persons killed by accident, and in whom tuberculosis was not suspected.

From what has already been said regarding the inhalation of the

germs, it is quite evident that the destruction of the sputa before it becomes dry, is the best preventive against the spread of consumption. The victim should be made to understand that he is a standing menace to his family, to his friends, and to the public generally, unless he follows strictly the precautions advised. What are they? While in his house he should always expectorate into a vessel containing some disinfecting fluid. When out, he should carry and *invariably* use a receptacle for the sputum; this will prevent the filthy habit of expectorating on the sidewalks, floors of rooms, railway cars, etc. The contents of the vessels should be burned daily or oftener, never thrown on the ash-heap, street, garden, or field. After which the vessel should be put in boiling water for 20 minutes. The expectoration may become dry on his beard, clothes, and hands; hence he should be clean shaven, and keep himself scrupulously clean. If he allows the sputa in his room to become dry and pulverized, he is keeping up his disease by re-inhaling them.

Those who are compelled to live in the company of consumptives, should live in the open air as much as circumstances will permit. The atmosphere of their bedrooms cannot be too fresh and pure, they need not fear loose windows, summer or winter. In mild weather, the window in the room should be lowered a few inches from the top, day and night. When there is no fire in the room, a lighted lamp in the fireplace will create an upward draught.

All the good advice that can be given will not eradicate the almost universal habit of spitting on the sidewalks. Therefore Dame Fashion makes a grave mistake when she decrees that they shall be swept by the skirts of our ladies, regardless of the germs they carry into the household.

The room in which a consumptive patient has lived or died should on no account be occupied by another without being thoroughly disinfected. To do this the ceiling should be lime washed, the wallpaper removed, or in default of that, well rubbed with fresh bread and the debris burned. The floors and woodwork should be washed with a solution of corrosive sublimate and permanganate of potash. All clothes worn by the patient should be disinfected by steam or fumigation.

Hippocrates wrote that the greatest and most dangerous disease, and the one that proved the most fatal to the greatest number, was consumption. And to-day it is generally conceded that one-seventh of all deaths are due to consumption, and that one-sixth of all mankind is tuberculous. In 1894 the general mortality ranged from 13.4 to 50.3 for each 1000 living. In England and Wales, it has decreased from 2410 per million in 1870, to 1307 in 1896. Since the introduction of sanatoria, it has been reduced 7 per cent. And it is claimed that 70 per cent. re-

cover in some institutions when the patients are treated during the first stage of the disease.

Tuberculosis has been properly called the "scourge of man and beast." It is estimated that 5 per cent. of all milch cows are tuberculous, and among high-bred cattle it often ranges at 50 per cent. Dr. Martin of the Royal Commission of England, says: "The milk from cows with tuberculous udders possesses a virulence which can only be described as extraordinary." Hence as milk is used by man from his cradle to his grave, the first step towards prophylaxis in man is to stamp out the disease in cattle. How is this to be accomplished? By a universal inspection, and the application of the tuberculine test to all milch cows, by a veterinary surgeon, not by the owner, and by the destruction of all tuberculous meat, and the isolation or death of diseased cattle.

To have wholesome milk, the animal yielding it must be in perfect health. To secure this, she should be carefully fed, groomed, and kept in a stable which is clean, light and affords not less than 1000 cubic feet of air space. Milk taken from the udder of a healthy animal contains no germs, and if hermetically sealed will keep indefinitely. But its power of absorption is such that in the process of milking—when in an impure atmosphere—it will absorb thousands.

General sanitary improvements have reduced the mortality from consumption nearly two-thirds since 1838. England was the first country to establish special hospitals for the treatment of the disease, but the percentage of improvement in them, being only 20 to 30, as compared with 50 to 90 in sanitoria where the aërotherapeutic treatment is pursued. Hence, sanatoria are being established in all civilized countries. It is hard to arrive at correct conclusions regarding the mortality in them, so much depends upon the stage of the disease existing in the patient at the time he enters the institution.

Dr. Walters asserts that, "generally speaking, one may say that from one-fourth to one-third of the patients treated in sanatoria, are practically cured, or a still greater proportion if they are treated in the early stage." Probably systematic and prolonged treatment from an early stage, would restore to health from one-half to two-thirds of our consumptive patients. The sick, as a rule, will not submit to more than a few months treatment in a sanatorium, so that we must trust to the educational influence of the sanatorium to complete the recovery of those treated in it. One argument in favour of sanatoria is that they are the best educators regarding prevention and treatment. General hospitals necessarily claim few recoveries from consumption. Patients seldom seek admission to them during the early stage of the disease, their sojourn averages about 15 months and costs the state about one

dollar per day; while the sojourn in a sanatorium rarely exceeds six months, and oftener much less, costs very little more per day, with the probable restoration to health of from one-half to two-thirds. Again, it is cruel to place consumptives among those labouring under various other diseases, the aërotherapeutic treatment and surroundings cannot suit both.

A sanatorium should be located within easy reach of the centre of population, say not more than 4 or 5 hours by rail, in a region free from malarial influences, fog, smoke, dust, and cold winds; on elevated porous ground, with a southern exposure, and having a good water supply, with acreage sufficient to afford ample walks, shade trees, etc., not less than 10 acres.

Sanatoria cost money for their construction and support. Who should furnish the money? All are to reap benefit, therefore, all should contribute. The state represents all, and has a money interest in the life of every individual in it. It does not hesitate to spend money for the introduction of immigrants, surely it should do the same to save life.

The Registrar-General of England values the life of every individual, old and young, of both sexes, at 149 pounds sterling. A death from consumption represents 630 days of sickness. Now, 77 died in this city from that disease during the last 8 months. Out of the 77 let us suppose 30 to have been saved. Placing their value at much less than the English value—say $500 each,—here we have a money value of $15,000. Apply this calculation to the province, and the members of our Government will have a goodly sum to spare for this noble work. That they will spare it I have no doubt. Our province must not be behind its neighbours in this great necessity. Nova Scotia has shown us a good example by an appropriation of $15,000.

My idea is that Fredericton would be a good location for a sanatorium, provided good water can be found, not from the river. Built in cottage form, the Government should furnish the land and the cottage for the poor and support it, while philanthropy should supply those intended to receive the paying patients. I am informed that this has been done in England and other countries, the stock paying from 2 to 5 per cent. I throw this out as a suggestion. If a better one is offered, I will gladly receive it.

In conclusion, gentlemen, let me say that one of the problems agitating the public mind at the present day, is the possibility of combating that great scourge of humanity, consumption. The laity look to the medical world for aid in the matter, and it is our duty to afford it. I well know that when I appeal to my confreres, I am appealing to a body

of gentlemen who are ever foremost in philanthropic work, and who perform more charitable labour than all other professions combined. We all know that the disease is largely preventable, and largely curable, let us impress this fact upon the minds of all. Man is prone to neglect health, until he begins to lose it. Let us teach him the nature, the cause, and the prevention of the disease, in fact teach him all we know about it, when he will realize the advantage of applying for aid in the early stage of the disease. Let us seek the co-operation of the statesman, philanthropist, and the sanitarian, when, I have no doubt, we will succeed in curing the curable, and in making harmless the incurable.

A CASE OF TYPHOID FEVER TREATED BY THE SO-CALLED "WOODBRIDGE TREATMENT."

BY

A. SCHMIDT, M.D.

Having read the claims of Dr. John Elliot Woodbridge of Youngstown, Ohio, for his treatment of typhoid fever, that if begun early enough no one should die of that disease and that also the case should be convalescent about a week after beginning treatment, and having, moreover, at one of the meetings of the Montreal Medico-Chirurgical Society, heard the President, Dr. Adami, remark that, theoretically, aperients ought to be beneficial in treatment, I consequently decided to adopt this treatment in the case which I now report.

On the 20th of May last I was called to see a man who had been ill in bed for six days suffering from symptoms pointing to typhoid fever. I proved the case to be one of typhoid fever by getting a positive reaction from the Johnston-Widal test, and on the following day commenced the Woodbridge treatment.

This treatment consists of antiseptics and aperients administered in small doses every fifteen minutes during waking hours. The diet is not supposed to be of very great importance and in this case, milk, eggs, and rice were allowed, with a moderate amount of stimulants.

The case was a rather severe one when treatment was begun. There were very pronounced nervous symptoms, including severe headache; and my reason for reporting it is that I was surprised by the rapid improvement obtained under the method adopted, and would like to induce others to give it a trial in order to prove conclusively its efficacy. This could be best carried out in a hospital where comparisons can be made so much more effectively. This, certainly, is the only case of typhoid fever I have ever seen, in which treatment seemed to effect the cure; for thirteen days after beginning the treatment, the patient was convalescent. On the fourth day the temperature had fallen to 98° F. and had it not been advisable to discontinue the administration of the tablets containing calomel, on account of a slight tenderness of the gums, I feel sure the patient would have got well still sooner.

Dr. Woodbridge makes use of three different kinds of tablets of the following composition.

No. 1 contains podophyllin resin, $^1/_{960}$ grain; mercurous chloride mild, $^1/_{16}$ grain; guaiacol carbonate, $^1/_{16}$ grain; menthol, $^1/_{16}$ grain; and eucalyptol, *q.s.* No. 2 is the same as No. 1, except that the quan-

tity of guaiacol is increased to ¼ grain, and thymol, $^1|_{16}$ grain is added. No. 3 contains guaiacol carbonate, 3 grains ; thymol, 1 grain ; menthol, ½ grain ; and eucalyptol, 5 minums.

The rules for administration as set forth by Dr. Woodbridge are :—

At any stage of an attack of typhoid fever (the earlier the better), or in any pathological condition in which a general or intestinal antiseptic or eliminant is indicated, begin with tablets numbered 1, giving one every fifteen minutes during all the wakeful portion of the first forty-eight hours, unless too frequent evacuations of the bowels demand their temporary discontinuance. At the end of twenty-four hours begin with formula No. 2. Give one every fifteen minutes. This formula, as well as formula No. 1, should be administered as freely as possible until not less than five or six free evacuations of the bowels have been secured during the second twenty-four hours of treatment, or as soon as practicable thereafter, even though three or four or more of tablets Nos. 1 and 2 have to be given every fifteen minutes. As soon as these free evacuations of the bowels have been secured the tablets of formula No. 1 should be discontinued, and the intervals between the doses of formula No. 2 so lengthened as to allow the movements of the bowels to become less and less frequent, until reduced to one or two each day, by the time the temperature has touched normal. On the morning of the third or fourth day the capsules of formula No. 3 should be commenced, one being given every three or four hours, alternating with the tablets. On the fourth or fifth day the tablets should be discontinued for a day or two, and teaspoonful doses of a saturated solution of chlorate of potash should be administered every three hours during this period, after which tablet No. 2 should again be exhibited as freely as possible without causing too frequent evacuations of the bowels. The patient should be carefully watched and should the slightest symptom of ptyalism supervene the tablets should again be discontinued and the chlorate of potash again freely exhibited.

In the treatment of typhoid fever in young children tablets of formula No. 4 may be substituted for tablets of formula No. 1, each of the former containing podophyllin $^1|_{960}$ grain ; mercurous chloride mild, $^1|_{16}$ grain; guaiacol carbonate, ⅛ grain ; menthol, $^1|_{96}$ grain ; eucalyptol, *q.s.* One of these tablets should be given every hour or oftener to infants or young children *pro re nata*, the object being to produce the same general effect as advised in the treatment of the disease in adults. After which, capsules of formula No. 5 should be administered, each of which contains :—Guaiacol carbonate, ½ grain; thymol, ⅛ grain; menthol, $^1|_{16}$ grain; eucalyptol, one minum; olive oil, *q.s.* Give one capsule three times a day or oftener according to the age of the child. During all the

course of the treatment in both children and adults the patient must wash down each and every dose of medicine with a large draught of distilled water or, if indicated, some good laxative or mineral water.

As is well known, we have no cure for this dreaded disease, so that any treatment seeming to have any effect in shortening its duration and perhaps in saving life, should be given a trial. Dr. Woodbridge's paper entitled "Further Reports on the Abortion of Typhoid Fever," appeared in the *Journal of the American Medical Association* for January 5, 1895. A second paper entitled "Reports on Typhoid Fever," was read before the Section of Medicine, at the 46th Annual Meeting of the American Medical Association in Baltimore, May 7-10, 1895, and appeared in the August 10th and 25th, 1895, issues of the same journal.

CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.*

The Honorary Fellows.

The Fellowship of the Royal College of Surgeons of England was on July 26th conferred on thirty-four eminent surgeons representing Scotland, Ireland, Canada, the United States, Austria, Belgium, Denmark, France, Germany, Italy, Norway, Russia, Spain, Sweden, Switzerland, and the Naval and Military Medical Services in the theatre of London University. The following is a list of the Honorary Fellows.

H.R.H. THE PRINCE OF WALES, K.G.

Elected 14th June, 1900.
Admitted 24th July, 1900.

The Most Hon. the MARQUESS OF SALISBURY, K.G.

The Right Hon. the EARL OF ROSEBERY, K.G., K.T.

Elected 12th July, 1900.
Admitted 26th July, 1900.

Elected 25th July, 1900.
Admitted 26th July, 1900.

Albert, Eduard, M.D.; Professor of Clinical Surgery, University of Vienna; Member of the Austrian House of Lords and of the Supreme Sanitary Council; Royal Imperial Councillor of State.

Ball, Charles Bent, M.D., M.Ch.; Regius Professor of Surgery, University of Dublin; Surgeon Sir Patrick Dun's Hospital; Consulting Surgeon Steevens' Hospital, Dublin.

Bassini, Edoardo, M.D.; Professor of Clinical Surgery, Royal University of Padua; Commander of the Order of the Corona d'Italia.

Bennett, Edward Hallaran, M.D., M.Ch.; Professor of Surgery, Trinity College, Dublin; President of the Royal Academy of Medicine in Ireland.

Berg, John Wilhelm, M.D.; Professor of Surgery, Royal Caroline Institute of Medicine and Surgery, Stockholm; Surgeon to the Royal Seraphim Hospital; Member of the Direction of the

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* Selected from the *British Medical Journal* report.

"Sophiahouse"; Member and Ex-President of the Swedish Medical Society and of the Scandinavian Surgical Association.

Von Bergmann, S. Exc. Professor Dr. Ernst, Geh. Med. Rath; Royal Prussian Medical Privy Councillor, Imperial Russian Actual Councillor of State, Knight of the Prussian Order of Hohenzollern, the Prussian Kron and Red Eagle Orders; Knight Grand Cross (with Diamonds) Imperial Russian Orders of the Holy Anne, of the Holy Stanislas and the Holy Vladimir. General-Arzt of the Prussian Army with the rank of Major-General. Served in the Franco-German and Russo-Turkish Wars.

Bloch, Oscar Thorvald, M.D.; Professor of Clinical Surgery, University of Copenhagen; Physician in Ordinary to His Royal Highness the Crown Prince of Denmark; Surgeon to the Royal Frederiks Hospital; Member of the Royal Board of Health of Denmark.

Cameron, Irving Heward, M.B.; Professor of Surgery and Clinical Surgery, University of Toronto; Surgeon, Toronto General Hospital.

Cardenal Fernandez, Salvador, M.D.; Vice-President of the Royal Academy of Medicine and Surgery of Barcelona; Director of the "Hospital del Sagrado Corazon" of Barcelona; Commander of the Royal Order of Isabella the Catholic.

D'Antona, Antonino, M.D.; Professor of Surgery, Royal University of Naples; Professor of the Propedentica Chirurgicale, and of the Institute of Surgical Pathology, of Naples.

Durante, Francesco, M.D., Senator; Professor of Clinical Surgery, Royal University of Rome; President of the Royal Medical Academy of Rome; President of the Italian Surgical Society; Knight of the Most Distinguished Order of the "Merito Civile di Savoia"; Knight Grand Cross of the "Corona d'Italia."

Halsted, William Stewart, M.D.; Professor of Surgery, Johns Hopkins University, and Surgeon to the Johns Hopkins Hospital, Baltimore.

Hingston, Hon. Sir William Hales, M.D., LL.D., D.C.L.; Professor of Clinical Surgery, Laval University; Surgeon-in-Chief Hotel Dieu Hospital, Montreal. Senator of the Dominion of Canada.

Jameson, Surgeon-General James, C.B., M.D., LL.D., Director-General, Army Medical Service; Knight of Grace of the Order of St. John of Jerusalem in England. Served in Canada, West Indies, and Egypt, and in the Franco-German War.

KEEN, WILLIAM WILLIAMS, M.D., LL.D.; Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; President, American Medical Association; President, College of Physicians of Philadelphia.

KOCHER, THEODOR, M.D.; Professor of Clinical Surgery, University of Bern; Colonel, Medical Department of the Swiss Federal Army; President of the Swiss Medical Association.

KÖNIG, FRANZ, M.D., Geh. Med. Rath; Professor of Surgery; Director of Clinical Surgery at the Charité Hospital, Berlin; General-Arzt à la suite of the Army Medical Corps. Served in the Franco-German War as Consulting Surgeon to the Prussian Army.

KUSTER, ERNST GEORG FERDINAND, M.D., Geh. Med. Rath; Professor of Surgery and Director of Clinical Surgery, Marburg; General-Arzt of I. Class à la suite of the Medical Service of the German Army.

LAMBOTTE, ELIE D. H., M.D.; Surgeon of the Hospital "Bon Pasteur," Bruxelles; Professor at the "Institute des Hautes Etudes."

LANNELONGUE, ODILON MARC, M.D.; Professor of Surgical Pathology, Faculty of Medicine of Paris; Member of the Academy of Medicine; Member of the Academy of Sciences; Surgeon, "Hôpital des Enfants malades."

LENNANDER, KARL GUSTAF, M.D.; Professor of Surgery and Obstetrics, University of Upsala.

MACEWEN, WILLIAM, M.D., LL.D., F.R.S.; Regius Professor of Surgery, University of Glasgow.

MACLEOD, Colonel KENNETH, M.D., LL.D., Indian Medical Service; Professor of Clinical and Military Medicine, Army Medical School, Netley; late Professor of Anatomy and Clinical Surgery, and of Systematic Surgery, Calcutta Medical College.

NICOLAYSEN, JULIUS, M.D.; Professor of Surgery, Royal University of Christiania.

NORBURY, SIR HENRY FREDERICK, K.C.B., Director-General, Medical Department of the Royal Navy. Served in the Kaffir and Zulu Wars, 1878 and 1879.

OLLIER, LEOPOLD, M.D.; Professor of Clinical Surgery, University of Lyons.

PACHOUTINE, VICTOR, M.D., Privy Councillor; President and Professor Imperial Military Academy of Medicine, St. Petersburg; Presi-

dent, Medical Council of the Empire ; Knight of the Orders of St. Stanislas, St. Anne, St. Vladimir, and Prince Daniel.

Pozzi, Samuel, M.D.; Professor, Faculty of Medicine of Paris ; Surgeon, Hôpital Bichat.

Raye, Colonel Daniel Charles O'Connell, M.D., Indian Medical Service ; late Professor Surgery, Calcutta Medical College, and Senior Surgeon, Calcutta General Hospital.

Roddick, Thomas George, M.D., LL.D.; Professor of Surgery, McGill University, Montreal ; Consulting Surgeon, Montreal General Hospital and Royal Victoria Hospital, Montreal ; Member of the Canadian Parliament ; Hon. Surgeon to His Excellency the Governor-General of Canada.

Rubio y Gali, Federico,M.D., Medical Councillor ; Member of the Royal Academy of Medicine of Madrid ; Founder of the Hospital and Surgical Institute, Madrid.

Tillaux, Paul, M.D.; Professor of Clinical Surgery, Faculty of Medicine, Paris ; Member of the Academy of Medicine ; Surgeon of the "Hôpital de la Charité."

Warren, John Collins, M.D., LL.D.; Professor of Surgery, Harvard University ; Surgeon, Massachusetts General Hospital.

Weir, Robert Fulton, M.D.; Professor of Surgery, College of Physicians and Surgeons, Columbia University, New York; Surgeon, New York Hospital and Roosevelt Hospital; President, American Surgical Association.

Six of the above surgeons so distinguished acknowledged the honour in the following speeches :

Professor Ernst von Bergmann, speaking in German, said : Mr. President, I beg to be allowed to thank you in the language of my country for the high distinction which has just been conferred upon us, the German-speaking surgeons. The language of one's native land comes direct from the heart, and it is in the language of our mother that we address our dearest on earth. The German-speaking surgeons have always sought their dearest and most cherished model in the constitution, organization, and achievements of the Royal College of Surgeons of England. Just as John Hunter by his own power founded the greatest and most beautiful anatomical and surgical museum, so have also his successors independently, and relying on their own resources, understood how to increase their rich inheritance in a wonderful manner, to accomplish great things brilliantly and always to march with the times. To be received by such men into such a Fellowship is an

honour than which no higher can be conceived. We all wish to express to you, Mr. President, our warmest and most cordial thanks.

Professor Durante, speaking in Italian, said: In the name of my Italian colleagues and my own, I thank you, Mr. President, and the illustrious College which has invited us to this memorable festival. Our gratitude for the high honour which you have deigned to confer upon us this day is as deep as the traditions of the Royal College of Surgeons of England are noble, and as profound as its merits in the progress of science and surgical art are great. From this temple consecrated to science, of which the priests are always brothers and devoid of all unwholesome political bias, may I be allowed to proffer a respectful salutation to glorious and mighty Britain?

Professor W. W. Keen, of Philadelphia, said: Mr. President, my lords, ladies and gentlemen,—On behalf of my American colleagues and myself, it gives me great pleasure to return our very hearty thanks for the honour just conferred upon us. We regard it as the highest surgical honour we could receive, for "Praise from Sir Hubert is praise indeed." Though the Royal College of Surgeons of England has attained a venerable age, it is far from decrepitude. No better evidence of this could be found than the many Members and Fellows who at the call of duty so cheerfully went to the front in South Africa. Foremost among them was your distinguished President, who, though he has reached an age when most men seek repose in slippered ease, responded to his country's call with his customary energy and alacrity. Happily the war is now nearing its end. Apart from any political results in South Africa, it has had two results in which we may well rejoice. It has bound together Great Britain and her Colonies in one solid Empire, and through the wise statesmanship of the most noble Marquess of Salisbury and His Excellency the American Ambassador has now joined Great Britain and America in a firm moral union, in which Her Majesty, if not monarch of our persons, is surely Queen of our hearts. We come to you as representatives of four of our great institutions of learning—from Harvard, hoary with the snows of nearly three centuries, to Johns Hopkins; in the Physicians of Philadelphia, I represent also the oldest institution in lusty youth of less than three decades, as President of the College of America at all similar to your own, a corporation which includes surgeons as well as physicians, and which was already in its teens when the Royal College of Surgeons was founded. On behalf of these and of all our medical institutions, we bring you our heartiest greetings on this festal occasion in the name of sound learning and accurate scholarship. It has been my pleasure in Philadelphia to welcome many of your Fellows, including three of your most distinguished Presidents. Some of

you have even swept across the continent in luxurious palace cars in but little over a hundred hours. To show how swift has been our progress and yet how young we are, I need but recall the fact that this College was nearly forty years old before the name of Chicago, now a city of nearly two million people even appeared upon the map; and when you were founded, beyond the fringe of civilization on the Atlantic coast, the only inhabitants of the vast region from the Alleghanies to the Golden Gate were the buffalo, the bear, and the savage Indian. But though so young, we come not empty handed. Three great medical advances mark the past hundred years—vaccination, anæsthesia, and antisepsis. The first and third of these are yours, but the second—anæsthesia—is the gift, better than Magian gold and frankincense and myrrh, which to-day America lays on the altar of science. Before that historic date, October 16, 1846, the poor victims of the knife were bound hand and foot, and held in the grasp of sturdy men, but hand and cord could not repress the fearful outcries which filled the air. But at Warren's touch the thongs fell off; he spoke, and the stormy billows of this Gennesaret of pain were stilled; the peaceful blessed sleep of ether hushed every cry of pain. Then first was modern surgery made possible, and what was made possible by our Warren was made safe and successful by your Lister—no, not your Lister, but our Lister, for his name belongs to no age and no country, but to humanity. It is therefore with a special fitness that to-day you have conferred your honorary Fellowship upon the distinguished grandson of him who first demonstrated the blessings of ether to a suffering world. At the very time when this College was founded he was a student at Guy's Hospital, and his certificate of attendance, signed by Mr. Cline and Sir Astley Cooper, is in the possession of his grandson. Again, Mr. President, I beg you to accept our sincere thanks for the distinguished honour you have conferred upon us.

Professor Lannelongue, who spoke in French, said: To praise the Royal College of Surgeons of England, with which we have just become connected, and the Centenary of which you are at present celebrating, would be to exalt one's own merits. The duty of a foreigner on whom such a great honour has been conferred, should be that of merely exressing his gratitude. However, there are in your past history as a surgical body during this century such achievements to be chronicled, that the very mention of which in a few words may not be displeasing to you. A journey fraught with interesting consequences which was made to England by a famous French surgeon, Roux, showed what you were in 1814. He returned from his voyage with the friendship of a number of the followers of Hunter's methods, such men as A. Cooper, Ch. Bell,

Brodie, Travers, Lawrence, and with a knowledge of the secret of the ligature of great vessels, the resections, which were not practised anywhere else, flap amputations, finally the reunion by intention, facts which were forced upon him. Roux returned in a state of mind divided between admiration of your audacity and mistrust of it. He proclaimed the brilliant features of your practice in surgery, but also did not conceal its imperfections. Such was the origin of a scientific interchange of ideas and discoveries, which has never slackened between you and us. The proof of this was illustrated when on March 8th, 1847, Flourens discovered the anæsthetic action of chloroform, and a few months later, on November 10th, 1847, Simpson of Edinburgh, employed this agent on man with admirable results. As early as 1852 Clover praised ischæmia, which does not in any way detract from the merits of Esmarch. And did not ovariotomy flourish in England when there was nothing but failure elsewhere? Another journey was necessary—that of Jules Worms and Nélaton in 1860 to impel convictions. In short, you have had a man at the right moment who was able to understand the work of a Pasteur and to appropriate his principles, and thus to establish modern surgical antisepsis. Gentlemen, to be associated with you is one of the most enviable honours, and we thank you.

Professor V. Pachoutine, of St. Petersburg, who spoke in English, said: I observe amongst the number of illustrious surgeons of many nations elected Honorary Fellows of the Royal College of Surgeons the names of some of the surgeons of Russia. This is a great honour to Russian surgical science, which, although in its youth, has already on its roll of glory the great name of Pirogoff. I take this opportunity to express to this greatly-esteemed College in the name of all Russian surgeons their very sincere gratitude for the distinction conferred upon their countrymen, and on their behalf further to express the wish that the Royal College of Surgeons of England may continue to flourish and to give to the world illustrious men, who like their predecessors will be shining lights to the surgical science, ever opening new roads for surgical practice to the benefit of the human race.

Professor T. G. Roddick, of McGill University, said:

"Mr. President, my lords, Fellows of the Royal College of Surgeons, ladies and gentlemen,—On behalf of my colleagues from Canada and myself I return thanks for the great distinction conferred upon us today by your illustrious body on this, the one hundredth anniversary of your foundation. The Honorary Fellowship of the Royal College of Surgeons of England is unquestionably the greatest honour that can be conferred on any Colonial surgeon, or indeed on any surgeon no matter whence he hails. Be assured, Sir, we are not so selfish as to appropriate

this great compliment entirely to ourselves. We take it that we have been selected from the two great centres of education and commerce in Canada to represent the universities of Laval, McGill, and Toronto, and in a measure to represent generally the medical profession of that now far-famed Dominion. We feel that in conferring this distinction upon us you have to-day forged another link in that great chain of British Imperialism which is surely and rapidly encircling our globe. We see in your action a desire to further that great scheme of reciprocity in medicine throughout the Empire, which we in Canada especially are most anxious to establish. We hope to be in a position soon to submit to your General Medical Council a well-digested plan which we trust will be acceptable to that very representative body. Thus will Colonial graduates meet the graduates of the Mother country on an equal footing in the army and navy, and in connection with the various Colonial and Indian appointments, from which they are now practically debarred." Dr. Roddick concluded his remarks by referring to the work of the President and his associates in South Africa.

The Banquet.

A banquet was held in the Hall of Lincoln's Inn on Thursday, July 26th. Sir William MacCormac presided, and there were also present the Honorary Fellows of the College, including the Prince of Wales, Lord Salisbury, and Lord Rosebery; the Duke of Cambridge, the Portuguese Minister, the Earl of Kimberley, the Lord Chancellor, the Duke of Northumberland, Earl Spencer, the Bishop of London, Lord Lister, Lord Kelvin, Lord Rothschild, Lord Strathcona, the Lord Mayor, the President of the Royal College of Physicians, Lord Davey, Lord Alverstone, the Hon. Walter Rothschild, Sir H. Roscoe, the Solicitor-General, the members of the Council of the College, a large number of the Fellows of the College, and others in such numbers that the whole company exceeded 300. The Master of the Society of Apothecaries was unavoidably prevented by illness from accepting the invitation.

The Chairman, in proposing "The Health of the Queen," said he knew of nothing more touching or soul-stirring than to hear, as he recently had heard them in some distant and lonely land, perhaps in front of the enemy, the strains of our National Anthem. He asked them to drink with all enthusiasm the health of the best of women and the greatest of Queens.

The toast was enthusiastically drunk, the band playing the National Anthem.

The Chairman then gave "The Prince and Princess of Wales and the other members of the Royal Family." A large part had been taken in the public life of this country by His Royal Highness the Prince of

Wales, and he had earned the cordial goodwill, respect, and affection of all his fellow-countrymen. This was not only due to the fact that His Royal Highness was the Prince of Wales, but because his incessant labour for the public good had earned for him profound respect and esteem. As for his beloved Princess, every Englishman and every Englishwoman entertained for her the deepest admiration. Her charitable impulses carried her into all good things, and this country had been great because of them. They had there present among them the Duke of Cambridge. At this moment especially those present would like to honour him, for there was not in the whole wide scope of Her Majesty's dominions a man more whole-hearted and true and more deserving of the respect and admiration which His Royal Highness universally commanded.

The toast was duly honoured, the band playing "God Bless the Prince of Wales."

The Prince of Wales, who was received with loud cheers, said in reply: Mr. President, my Lords, and Gentlemen,—I rise to respond to the toast which has been so kindly and cordially put from the chair. In my own name, as well as in that of the Princess of Wales, and also of my illustrious relative, I beg to tender to you our warmest thanks for the way in which it has been accepted by this large and distinguished company. I appear before you to-night in a totally new capacity. I have received the high honour and privilege of having been admitted into this great and distinguished society as an Honourary Fellow of the Royal College of Surgeons of England. I had already received that privilege from the Royal College of Physicians, and I am glad to think that I may now be considered as one of you all, and belonging to the two professions which give way to none in value and in the good they do to mankind; but I fear that I shall never be allowed to practise as a surgeon, as the result, I am afraid, would not be satisfactory. I might be guilty of manslaughter, if not of murder, and I do not think that even my learned friend the Lord Chancellor could help me out of the difficulty; but I appreciate the honour greatly. There is no profession in this world I admire more than that of surgery. The progress made in that profession has been enormous, and greater, perhaps, than that of the sister profession. My old and valued friend, Sir William MacCormac, to whom I am indebted for his great care two years ago when I met with an accident, has just returned from South Africa. I am sure all of us appreciate his having given up his duties here to go through the hardships of that great campaign, from which he has brought back much information, and in which he has given great assistance; nor can I forget the name of my friend Mr. Treves, who rendered great service. All of us have been desirous of doing our best to alleviate the sufferings out there and of those who have returned home, and no more noble

work has been done than that of the surgeons, military and civil. It is not for me to criticise anything that may have been said of the great profession which did its best in this campaign, but I am sure that it did do its best. It had difficulties to contend with, and the way in which the hospitals were managed out there, and have been managed since the return of the sick and wounded home, does the greatest credit and honour to the profession. I thank you for the high compliment you have paid me in inviting me to be present at the hundreth anniversary of the society, and electing me an Honorary Fellow of it.

The Chairman next proposed "The Honorary Fellows of the College." He said: This is the first time this toast has been proposed, as it is only quite recently that we obtained the necessary authority to grant these honorary distinctions. We attach great value to them, and it was our wish to bestow the highest honour in our power on the distinguished persons who have just been made Honorary Fellows of our College. There can be no doubt that the importance and success of this Centenary have been greatly enhanced by the exercise of these powers. We are greatly gratified at being able to bestow these honours, and there can be no question that the position of the College is strengthened by the inclusion in its ranks of so many distinguished persons. The Prince of Wales, who stood first upon their roll of honour, had been already received with enthusiastic acclaim. All knew his generous sympathy and interest in the affairs of the College, and his desire that the Centenary celebration should prove worthy of the College and the occasion. He trusted it had been so. Their great countryman, Lord Salisbury, had spared time from the urgent affairs of State to come and do them honour. They were deeply grateful to him, and had tried to make what return was in their power not only to that great statesman, but to that altogether admirable chemist, a branch of science of such great importance to medicine. Lord Rosebery's great gifts were known to them all. He was lately asked by an eminent physician to tell him the principle which had guided the Council in their selection, as Honorary Fellows, of Lord Salisbury and Lord Rosebery, and his reply was that Lord Salisbury was an eminent man of science, and that Lord Rosebery was eminent in everything else. All the other Honorary Fellows were surgeons, the elect of their profession, the glory of their several countries and the pride of this College. He congratulated them on their newly acquired distinction, and he congratulated the College on the distinction they bestowed upon it. He proposed that they should drink to the health, long life and happiness of the Honorary Fellows of the Royal College of Surgeons, and he coupled with the toast the name of one of them, the Earl of Rosebery.

The Earl of Rosebery replied.

Mr. Thomas Bryant proposed "The Guests," who were, he might honestly say, the choicest representatives of every learned, scientific, artistic, and useful branch of human endeavour that this metropolis could supply. The Council had been led to make this selection under the conviction that the distinguished Honorary Fellows of the College whom they had been invited to meet were men of equal calibre. For the three professional, but not practical Fellows who headed the list were men whom all the world delighted to honour, and who honoured the College by becoming Fellows, and thus partaking of its interests, whilst the remaining Fellows were the leading practical surgeons of the European and American States, and of our own much-beloved Colonies. In fact, they represented, with the Fellows of this College, the working bees of the surgical profession, which utilised to the full every science and art which the visitors so ably cultivated and culled from all branches of human industry—everything and anything that could possibly help towards the investigation, prevention, and cure of disease, or the relief of pain. Indeed, he liked to think of them as the representatives of applied science for the benefit of mankind. They recognized no rivalry, but only friendly competition, which, it was to be hoped, under the banner of the Fellowship of the Royal College, would be encouraged for the benefit of all the world. The name that he had to couple with the toast was the representative of all that was good and all that was great in this highly-favoured Island State, the Lord High Chancellor of England, Lord Halsbury.

The Lord Chancellor said he was the feeble mouthpiece of the feeling which pervaded all his fellow guests for the magnificent banquet to which they had been bidden that evening. He did not know what the results might be, and he felt some regret that they could not look for assistance in their possible infirmities from any of the persons who had been newly endowed with the imprimatur of that society, but he hoped that if their exuberant hospitality put any of the guests in difficulties the sister society would help them.

The Marquis of Salisbury proposed "The Prosperity of the College of Surgeons," and Sir William MacCormac replied to the toast in graceful terms.

The company shortly afterwards separated. To each guest were presented two volumes. One is a souvenir of the College of Surgeons, and contains an account of the first incorporation, and a brief history of the College from 1800 to 1900. It describes the College building, the incomparable museum and its various departments; mentions the conservators who have presided over the museum; and describes the examina-

tions of the College, its trust funds, lectures, and the portraits and busts which are found within its walls. The value of the volume is much enhanced by the many excellent engravings with which it is illustrated. The second volume contains the address of welcome delivered by Sir W. MacCormac at the presentation of honorary diplomas in the theatre of the old buildings of the University of London, Burlington Gardens, and a particularly valuable collection of appreciative biographical notices of the Masters and Presidents of the College since its foundation in 1800 to the present time. Both volumes are splendid specimens of printing, and are handsomely bound; and their distribution was a glad surprise to the recipients.

One of the chief features of the various functions of the Centenary celebration was the presence of so many of the foremost surgeons of Europe, the United States and Canada. Two Australian surgeons also would have been present but for the exigencies of the war in South Africa. Altogether the Festival was a great success, and may be expected to bear good fruit for the profession both of a national and international character. Its excellent organization throughout reflects the greatest credit on all who arranged its several details.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Angina Pectoris.

CLIFFORD ALLBUTT, M.D. "Angina Pectoris." *Philadelphia Medical Journal, June 16th, 23rd, 30th, 1900.*

The group of cases described by Allbutt are sketched in the following terms. "The group which we name thus consists, in the great majority of cases, in a peculiar pain often attributed to the heart, but in its chief seat retrosternal, and running thence in the course of certain spinal nerves, in an imperious arrest of movement, and in a sense of impending death, or at any rate, in a peculiar dread; sooner or later indeed, the disease is generally, if not always fatal, in its own peculiar manner. When we inquire farther we find good reason, in nearly all cases to infer the existence of certain structural changes, such as coronary or aortic atheroma; and frequently, though not perhaps necessarily, such decay of cardiac structure as coronary atheroma and other causes of atheroma are wont to induce. Beside these eminent features there are certain negative peculiarities; for instance the dyspnœa characteristic of heart disease is not evident in angina—the attitude is one of terror-stricken stillness. Omitting aberrant cases and secondary and subordinate features, such is angina pectoris."

"'Tobacco angina' is not the result of organic disease, it is not fatal, it does not arrest the patient in the same imperious grip, its clinical features and course are different, it is a paroxysm of persistently manifest cardiac perturbations, it probably depends on toxic causes of quite another kind and consequence, and it disappears with the elimination of its cause."

Although coronary atheroma and cardiac degeneration are common, angina is a rare disease. There is something in angina which separates it from cardiac disease and from the spasmodic neuroses. Structural disease of the heart itself is not indispensable. Patients attacked in

early life may in rare cases recover; and over the age of 50 they may survive for 15 or 20 years."

Allbutt does not regard vaso-motor changes as the cause but rather the result of angina, pointing out that any form of severe pain is accompanied by pallor and sweating. Pseudo-angina is frequently accompanied by vaso-motor changes and in such cases it is quite in accordance with experience that the vaso-motor centre should be less stable, and that when the vaso-motor centre is disturbed that the neighbouring respiratory centre should be also affected and so cause the "pseudo" dyspnœa.

In angina the site of the pain is rarely cardiac but rather retrosternal, about the root of the aorta. In some cases there may be pain over the heart but such a pain is more characteristic of the false disease or of the enlarged and labouring heart.

The pain, although almost invariable, is not an essential sign. A case is quoted of a gentleman of 45 in whom vague sensations about the heart were followed by a pain in the left palm coming on during exertion. Although there were no signs of disease in the heart or arteries attacks of true angina developed later. In another case the early symptom of the disease was a sense of weakness and discomfort in the arms, coming on for the first time during the exhaustion following prolonged dancing. Pain is sometimes felt in the epigastrium and such cases seem to be peculiarly fatal.

Although Allbutt is inclined to believe that angina may occur without any permanent static change, yet it usually is associated with permanent organic diseases of the aortic area, such as aortic insufficiency and stenosis, atheroma, coronary disease and aneurism; as though there were some tie between the causes of angina and these aortic conditions. Mitral regurtation supervening in the course of angina usually mitigates the disease, probably owing to the fall of blood pressure.

Speaking of the character of the pulse during an attack of angina, Allbutt has not found any constant or characteristic variation of the pulse, although he has had the opportunity of examining the pulse in six cases, and of making repeated examinations in several of them. The sphygmograph is quite incapable of analysing the classical tracing taken by Brunton, and the inference that high tension was present was quite unwarranted by the facts. Putting the different accounts together it may be taken as agreed that the pulse is usually unaffected during an attack of angina, although from the class of cases attacked the pressure is generally high, altogether apart from angina. In some cases, even in pressure, the pulse continues unchanged; in others it is slowed or quickened a little, or its pressure rises, or it halts or flutters for a few

beats. In the current hypotheses of angina these facts relating to the pulse are too often entirely disregarded.

A series of morbid changes, known best in the horse as intermittent claudication, are often cited in illustration of the nature of angina. This theory might be used to explain the final and fatal attack, but it is hardly satisfactory in ordinary attacks in which there is practically no disturbance of the pulse, or at any rate no more disturbance than occurs in flatulent dyspepsia or in irritation of a sensory nerve. Claudication again does not explain the essential feature of pain; so far as is known thrombosis of a coronary vessel does not cause pain, but it must be admitted that observations on this subject are not numerous.

Cramp of the heart is often regarded as the exciting cause of the attack, but here again the regular beat of the heart is strongly opposed to such an origin. The cardiac muscle is regarded as being incapable of cramp, its quality of rhythm being too deeply implanted to allow of any such departure from its normal action. The doctrine of dilation does not receive any support from the acute dilation which occurs so commonly in cases of over exertion, pain anything like that of angina being constantly absent. The pale pinched face of angina is in strong contrast to the cyanosis and dyspnœa of dilation, so that this view receives no support from symptoms.

The view advanced by Allbutt is that the pain of angina is a referred pain, not cardiac but aortic in origin. Cases of aortitis accompanied by intense pain are cited in support of this view. Recently published cases of pericarditis involving the base of the heart and accompanied by intense pain lend a strong support to this view, as also a case of the author's in which acute rheumatic aortic disease was accompanied by intense attacks of angina.

Although disease of the coronary arteries is frequently found in angina the association is not invariable; and conversely the disease of these vessels is frequently present without pain. The essential feature is probably disease of the root of the aorta.

The fatal termination of an angina is regarded as being secondary and quasi-accidental, and comparable to the fatal termination sometimes seen in gall stones, or resulting from a blow on the abdomen or on the testicles.

This explanation fits in well with the fact, recently emphasised by Musser, that the onset of mitral reguritation is usually associated with a disappearance of the painful spasms of angina; it also accords with the well known action of the nitrites in relieving the pain of angina, the tension in the aorta being lessened in both cases.

The question to solve is why attacks of angina occur in some cases of

disease of the aorta and not in others. It may be that in some instances the functions of the nerves are gradually lost and rendered gradually insensitive. It seems likely, judging from the scanty evidence, that angina occurs chiefly when the first inch of this vessel is affected, and it is in just such cases that the coronary vessels or their orifices would be implicated, and the nerves of the cardiac plexus involved.

Influenza and Chronic Heart Disease.

Professor Schott, Bad Nauheim. "Influenza and Chronic Heart Disease." *Ber. Klin. Woch., 1900, No. 21.*

Owing to the tendency of the public to attribute any ailment to a former attack of influenza, much care must be exercised before accepting such statements as correct. Schott only admits for discussion such cases as he has himself followed from the onset, or in which a definite statement from the medical attendant has been obtained.

There is a general agreement that cardiac neuroses, both motor and sensory, are by far the most common cardiac manifestations of influenza. Although many such conditions pass off, yet a not inconsiderable percentage of such cases are of a more serious nature. In the majority of such instances where a rapid pulse rate occurs the blood pressure is low and may continue so for weeks. There is dicrotism, and often cardiac weakness is indicated by the presence of arhythmia or allorhythmia. The pulse rate again is often unduly rapid in proportion to the temperature, and much higher than in other infectious diseases.

Bradycardia is observed with remarkable frequency, and as in tachycardia is often associated with irregularities in the volume and rhythm of the pulse; dicrotism is unusual but a low blood pressure is not uncommon.

A change from tachycardia to bradycardia or vice-versa is not uncommon. Most commonly the tachycardia of the febrile period passes in a few days to bradycardia, but the reverse change is occasionally seen, a tachycardia coming on in consequence of over-exertion or mental disturbance, or as a consequence of the use of tea, coffee or alcohol; sometimes the change comes on rapidly without obvious cause.

These neuroses are sometimes precursors of further cardiac change. Cardiac weakness shows itself in the production of dilatation, coming on spontaneously or in consequence of trivial causes. Slight physical exertion or mental excitement may suffice to set up an increase of cardiac dulness of one or both ventricles, and a dull or impure first sound is sometimes noticed. The occasional persistence of such disturbances is illustrated by the case of a professor of medicine, who for several years

was subject to attacks of tachycardia and accompanying dilatation, after a severe attack of influenza.

The sensory neuroses are less common than the motor. Schott has not observed vaso-motor changes nor have they been described by others in connection with influenza. Cardiac pain on the other hand, both in the form of pseudo-angina and true stenocardia, is often observed. Pains of this character may occur on the first day of the disease and be of great severity. Although referred to the heart by the patient yet tender points are sometimes found over and on each side of the sternum.

True angina in comparatively young people free from arterial disease, although not common, has been described by a number of observers. The first attack comes on during the early stage of the malady and recurs once or more. Apart from the fact that influenza angina occurs chiefly in men under 40 and who are free from evidence of arterial disease, it presents no distinguishing point from true angina, and in its further course it runs a course precisely like that malady, and is by no means the benign affection described by some writers. Schott has observed in such cases a rapid development of sclerosis of the temporal and radial vessels, rapid aging of the individual and marasmus, such as has been described in the nervous sequelæ of influenza.

Neurasthenia of the heart is frequent, and like other neuroses is the result of the influenza poison on the nervous system.

The action of the grippe toxins on the heart muscle is a depressing one, and cardiac weakness is apt to develop during convalescence from any want of care. Indeed a permanent dilatation or fatty or parenchymatous changes may follow influenza, although in most of such cases some other factor can be found leading to cardiac weakness. Acute cardiac dilatation, described by French writers, must be a very rare sequel, but it is held responsible for certain cases of sudden death.

Valvular lesions from endocarditis due to influenza have been described by many writers, although they are not common. Schott has only seen two cases, one of aortic insufficiency and the other of a mitral lesion with symptoms pointing to cerebral embolism. Bacteria resembling those of influenza have been found in the cardiac granulations, but they have not been successfully cultivated.

Valvular disease in consequence of disease of the pericardium, pleura, and lungs, or as a consequence of acute rheumatism, are much more common, and are due to mixed infections. Cases are quoted illustrating the development of endocarditis from influenza pneumonia and also as the result of pericarditis following influenza. That the virulence of the influenza bacillus is probably increased by association with other bacteria is indicated by Grassberger's experiments where influenza bacilli

mixed with streptococci attained a larger size and were much more resistant to alkalies. Richter further found a luxurious growth of influenza bacilli when pus was present.

Especially predisposed to the more serious cardiac changes are fat or gouty people, and it is probable that gout is reponsible for the large number of cardiac cases reported by British clinicians in connection with influenza.

The hearts of patients suffering from chronic cardiac disease are very liable to suffer from the effects of influenza. In valvular affections disturbances of compensation readily ensue, and in a number of cases a fresh endocarditis is added on. The altered valve seems to be a good culture-medium for micro-organisms, and the morbid process may spread to other valves, and, if the aortic valve is attacked there is a great liability to attacks of angina pectoris.

In cases of congenital heart disease a fatal termination is not infrequent in consequence of an attack of influenza, or in others a serious disturbance of compensation is induced. In myocarditis depending on arterio-sclerosis, in addition to inflammatory processes, disturbances of compensation and attacks of stenocardia may result.

The fatty heart readily passes on to fatty degeneration, and in its enfeebled condition it may dilate and reach a large size. Attacks of bradycardia may accompany the fatty heart, but, on the other hand, a tachycardia and dilatation is not infrequent.

Apart from acute rheumatism there is no malady which affects the heart so injuriously and in so many different ways as influenza, and the last decade has added much to our knowledge of its deleterious action on this organ.

Tuberculin and the Early Diagnosis of Tuberculosis.

B. Fraenkel, Berl. "Tuberculin and the Early Diagnosis of Tuberculosis." *Klin. Woch., March 19th, 1900.*

Koch in his original communication on tuberculin showed that healthy men do not react to tuberculin in doses not exceeding .01 g., although larger doses may induce reaction. Using .25 g. on himself, Koch produced a violent reaction both local and general.

In tubercular patients a dose of .01 g. produces a violent local and general reaction. There is fever often ushered in by a rigor and the temperature rises to 39, 40 or even to 41, C.; pains in the limbs, tired sensations, cough, and sometimes nausea and vomiting are also present. A slight icterus or an exanthem are occasionally seen. The attack begins four or five hours after the injection and lasts twelve or fifteen

hours. Exceptionally it may appear later and then runs a milder course. Gerhardt has shown that the reaction may occasionally be postponed for as much as thirty-six hours after the injection. In addition to the general reaction there is a local reaction, consisting in redness and swelling at the site of injection. In cases of superficial tubercular lesions such as lupus this reaction is very distinct. Before using the test the temperature must be taken every three hours in order to ascertain its usual level. After the injection the three hour observations are continued and a rise of even ½ a degree (1 F.) indicates a reaction. If neither a local or general reaction follow, a second test is made using three or five mg., and if still negative a third with six or ten mg., the larger dose being employed when five mg. have been used at the second trial.

A positive reaction, general and local, is a certain sign of tuberculosis, whilst a negative reaction indicates a freedom from tuberculosis. Fraenkel considers that no harm can result from the careful use of tuberculin, and the advantages of making an early and positive diagnosis should secure for this method a more general use. Figures are quoted from Koch's paper showing the accuracy of the test, and the testimony of veterinary surgeons all goes to show the delicacy and accuracy of the test. Voges considers that errors occur in animals in only 2.8 per cent. of cases, and it seems not unlikely that even this estimate is too high.

Amongst the cases in which tuberculin is of value are those of suspected tuberculosis in which bacilli are absent from the sputum. Early cases of tuberculosis sometimes present the clinical features of chlorosis, and in the absence of physical signs in the chest are readily overlooked. In such instances a slight cough or loss of flesh may awaken suspicion of the true nature of the disease, and this can be confirmed by the use of tuberculin. Under the influence of this agent evidence of local disease may sometimes be detected at the apex. Scrofulous lesions in children again form a fertile field for the use of tuberculin. Rhagades about the nose or mouth sometimes give a definite local reaction. Owing to the difficulty of using the rhinoscope in children it is not very satisfactory to test cases of adenoid growths, but enlarged glands of a tubercular nature swell, whilst those of a non-tubercular character do not react.

In surgical cases owing to the superficial sites of the lesions a local reaction is readily observed, and in differentiating tubercular, syphilitic and cancerous conditions the tuberculin test is of the greatest value, particularly when a piece of the morbid tissue cannot be removed for microscopic examination.

On the Effects of White and Dark Meats in Chronic Renal Disease.

A. Pabst. "On the Effects of White and Dark Meats in Chronic Renal Disease." *Ber. Klin. Woch., Nov. 25th, 1900.*

Pabst has investigated, in two cases of parenchymatous nephritis, the action of dark and white meat, comparing them with a milk diet.

The preference for white meat in nephritis has been upheld by many of the older writers and has been supported lately by the authority of Senator. Others however, notably Offer and Rosenstein, do not regard white meat as preferable to dark, and indeed it has been shown that the former is often richer in extractives.

Pabst fed his patients for successive weeks on milk, white meat, milk, dark meat, and milk, at the same time recording the daily amount of urine and albumen, and estimating the number of casts. The results show a very trifling difference, from the use of different forms of meat in the total amount of albumen, in one case favoring dark and in another trial white meat. With a milk diet the total amount of albumen was often larger than with meat, and although this may have been an accidental coincidence, yet one case had three relapses with blood in the urine and fever, when on a pure milk diet.

F. G. Finley.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Some time ago, in these columns, MONTREAL MEDICAL JOURNAL, August, 1899, p. 610, I referred to several subjects of practical moment both to the operating surgeon and to the general practitioner. I then promised a further note on these subjects, when experience with the different methods and agents there recommended would justify me in giving a working opinion on them. I will now try to fulfil part, at least, of that promise.

(1) Sterilization and Silk Ligatures and Sutures.

Surgeons are still on the outlook for the *ideal* ligature and suture material—one which will be completely absorbed after it has served its purpose in the tissues, and yet remain, meanwhile, aseptic and non-irritating. Catgut, plain or chromicised, is an absorbable material, but it is not an easy matter to sterilize it; and while we get at times perfectly satisfactory results from its use (say in the operation for radical cure of hernia), there are times when we find the whole buried line of catgut sutures infected, with, often, perfect union of the skin incision. "Faulty technique" you will say; and, therefore, "why blame the catgut?" There may be something in that; the more one operates the more one realizes that there is some truth in the dictum, "the soil is everything, the microbe nothing." It certainly makes a great difference whether or not you put your buried sutures or ligatures into clean cut, unbruised tissues, whose vitality is not impaired by excessive handling and tearing. Marcy, of Boston, insists most strongly on this, and shows that rapid, clean operating has much to do with speedy, aseptic healing. But after all has been said, it does seem to me, both from my own experience as well as from watching the results of my confreres in the hospital, that silk is a safer suture and ligature material than catgut. I still think silkworm gut or horse hair sutures best for the skin incision whence they are subsequently removed.

The silk I have used has been prepared as suggested by Hayler—first boiled, and then kept for forty-eight hours in alcoholic bichloride solution, out of which it is directly used at the time of operation. It has the further recommendation for the general practitioner that he can always prepare it easily for any operation and be able to rely on its asepticity. But will it be absorbed? Some surgeons maintain that

pure silk, being an animal product, will ultimately be completely absorbed if it remains sterile, and many facts certainly seem to show that it will.

I have also, through the kindness of Dr. D. P. Anderson, assistant pathologist to the Montreal General Hospital, had some cultures made to test the celluloid thread of Pagenstecher (*vide* MONTREAL MEDICAL JOURNAL, March, 1900, pp. 209). Dr. Anderson showed that if the thread was kept in alcohol without previous boiling, it was sterile ; and very limited trial of it used in that way as a skin suture, points to the same conclusion. If further experience shows the truth of this it will be a valuable addition to the surgeon's armamentarium, because it is a very strong material (linen thread coated with celluloid), and if not boiled but used directly from alcohol it should be aseptic on account of its celluloid coating, which boiling removes, but alcohol hardens. That it will ever prove an absorbable material for buried sutures I very much doubt.

(2) A Plea for the Further Use of Carbolic Acid.

(MONTREAL MEDICAL JOURNAL, January, 1900, p. 67.)

We have fairly tested Dr. F. J. Adams' plan of using pure carbolic acid, subsequently neutralising it by absolute alcohol, on the skin over infected areas, *e. g.*, cellulitis, buboes, carbuncles, erysipelas, etc. In not one single instance has it in our hands arrested the inflammatory or suppurative processes. Indurated buboes went on cheerfully to suppuration, though the skin over the tumour was daily whitened with carbolic acid, neutralised in two minutes with alcohol.

But one thing we have proved to our complete satisfaction, and we can confidently recommend to any one who has to deal with localised infective conditions (and what practising physician has not ?), and that is that if the infected cavities are opened and the necrotic inflammatory tissues swabbed with pure carbolic acid, neutralised after a minute or so with pure alcohol, the infective process ceases and healthy granulations will replace the sloughing areas in a very short time. By this means we have certainly very materially lessened the time of convalescence in these cases as well as simplified the operative procedures. We have used carbolic acid in this way upon the most delicate tissues, *e. g.*, brain tissues, bowel, etc., and have had nothing but the best results. It has put a new method into our hands for the treatment of acute localised infectious conditions in whatever part of the body they may be found, but it must be applied directly to the infected area and not to the skin over it, to reap any benefit from its employment.

J. M. Elder.

Dermatology.

UNDER THE CHARGE OF G. GORDON CAMPBELL.

Roentgen Rays in the Treatment of Skin Diseases.

Wm. Allen Pusey. "Roentgen Rays in the Treatment of Skin Diseases and for the Removal of Hair." *Journal of Cutaneous and Genito-Urinary Diseases, July, 1900.*

The untoward effects resulting from the use of the Roentgen rays in surgery suggested to many observers in various countries the possibility of turning this property to account in the treatment of skin diseases. Very soon after the general adoption of this method of diagnosis, cases were reported in which lesions, varying from mere blanching of the hairs to necrosis including the deeper tissues, were produced by exposure to the X-rays; and it was felt that, if this destructive effect could be controlled, a valuable therapeutic agent would be gained. Pusey, in this paper, gives a very comprehensive review of the work done in this direction and also gives practical instruction regarding the kind of tubes, length of exposure, etc., which have been found most suitable for the purposes of the dermatologist.

This form of treatment can be made use of in four classes of affections :—

"(1) In hypertrichosis, for the removal of undesirable hair.

(2) In disease of the hair follicles, such as sycosis, tinea tonsurans, favus, where the removal of diseased hair is an essential part of treatment.

(3) In the treatment of inflammatory affections, like chronic eczema, where the purpose is to stimulate the tissues and cause absorption of inflammatory products.

(4) In certain specific affections, like lupus, where it is desired to cause destruction or absorption of tissues of low vitality."

The removal of hairs by this method is greatly simplified and has great advantages over electrolysis. It is not painful, and very much larger areas can be denuded at one or two sittings. The skin, too, with the exception of a transient pigmentation and erythema, is left in the same condition as before. Experience seems to show that there is less likelihood of regrowth, many cases having been reported in which more than a year has elapsed without any appearance of new hair.

In parasitic diseases, such as tinea tonsurans, where the removal of the

diseased hairs is rendered more than ordinarily difficult by the liability there is to their breaking off and leaving the diseased root in the follicles, such a method has immense advantages, as the effect of exposure to the rays is to loosen the hair so that it can be removed without exerting any force. Moreover, it is thought that the rays have a marked bactericidal effect.

Several cases of intractable chronic eczema have been reported as rapidly healed by this method of treatment. The stimulation of the skin was thought to have lead to the absorption of the inflammatory products. Pusey fears that this method will have a very limited field of usefulness in the treatment of eczema.

It is in regard to lupus, however, that the most favourable results have been obtained, and quite a number of cures have been published. Schiff, Kümmell, Albers-Schönberg, Jones, and others have reported cases in which more than a year has passed without any recurrence of the disease. In a case reported by Jones of San Francisco, "one ulcerating point had been protected from the rays for the purpose of a control observation; when the other areas had healed this showed slight increase in size. This patch healed after three weeks of treatment." The effect is generally held to be due to the actinic rays, and from the striking similarity in the results obtained, there "is great likelihood that this method and Finsen's treatment by the ultra-violet rays of white light are identical in principle."

Just what changes are produced by the X-rays in the tissues so as to lead to the effects obtained has not yet been fully worked out. Darier, by a study of the effect of the Roentgen rays on the skin of guinea pigs, demonstrated that the tissues showed (1) enormous thickening of the epidermis in all its layers and (2) atrophy of the hair follicles. Pusey states that "the hair follicles and the connective tissue envelopes are particularly sensitive and react first to the irritation of X-rays. This is more than ever the case if the follicles are already the seat of disease. To this extent and to this extent only, X-rays may be said to have a selective action on the hair follicles in inflammatory affections like psycosis and tinea tonsurans."

The advantages which this method seems to offer for the treatment of lupus may be briefly summarized as follows :—Efficacy, freedom from pain, and the character of the scars. The latter are "soft, pliable, and thin, and nearly approach the normal skin in appearance."

There seems to be the same selective action in regard to lupus. The diseased areas become reddened and inflamed before the healthy surrounding tissues are affected at all. The "specific tissue of the lupus nodules is of such low vitality that the influence of X-rays may cause its

absorption or even destruction before having any considerable effect upon healthy tissue."

With regard to the use of the Roentgen rays in practice we copy Freund's directions as translated by Pusey. The conditions to be avoided are :—

"(*a*) Too great strength of the primary current; one never uses a current of more than one and one-half amperes and twelve volts' strength. This is, of course, much weaker than the currents used for skiagraphy.

(*b*) Too great tension of secondary current; one never uses an inductor of more than thirty cm. spark length.

(*c*) Too long and too frequent exposures.

(*d*) Not sufficient distance between skin and tube."

At the beginning the sittings are not longer than five minutes and the distance of the tube not less than fifteen cm. Freund recommends for the attainment of the best results the use of a mechanical interrupter, run at the rate of 800 to 1000 interruptions per minute. The surfaces which are contiguous to the areas to be treated are protected by lead masks.

The evidences that the exposures have been carried far enough are:—

(1) The appearance of erythema or pigmentation.

(2) Blanching of the hair.

(3) Loosening of the hair.

The Visceral Lesions of the Erythema Group.

Osler, Wm., M.D. "The Visceral Lesions of the Erythema Group." *British Journal of Dermatology, July, 1900.*

In 1895, Dr Osler published a series of eleven cases which he classed as erythema exudativum multiforme characterised by a variety both of skin and visceral lesions and by arthritic manifestations. Besides the more commonly met with skin lesions of erythema multiforme, these cases showed the characteristic eruptions of purpura, urticaria and angio-neurotic œdema. The visceral lesions consisted of "(*a*) local serous or hæmorrhagic exudate in the walls of the stomach or bowels, causing (1) crises of pain and (2) hæmorrhages ; (*b*) acute nephritis ; and (*c*) certain rare pulmonary and other lesions." The arthritic were "infiltration of synovial sheaths, periarticular tissues and arthritis." In the present paper the author gives the subsequent history of one of the numbers of the first series, and reports seven additional cases. He also analyses the symptoms of the whole eighteen cases and discusses the group of affections known collectively as erythema multiforme.

The case referred to, of which a further history is given, is briefly as follows :—A young lad came first under notice in his tenth year for

severe attacks of colic which were accompanied by urticaria. During his eleventh and twelfth years the attacks of colic continued and were always associated with either urticaria, purpura and urticaria, or circumscribed œdema. He had also signs in the lungs, leading to the suspicion of pulmonary tuberculosis, and an enlarged spleen. In his thirteenth and fourteenth years, the pulmonary manifestations were more marked, and he died in his fifteenth year of pronounced emphysema, bronchopneumonia, dilatation of the heart and pericarditis. Examination of the sputum for tubercle bacilli was always negative. The second series of cases was as follows :—

Case 12.—Neurasthenia ; dilatation of the stomach ; colic for two years at intervals ; exudative erythema ; leucocytosis.

Case 13.—Attacks of colic every week or ten days for six months ; on admission typical lesions of erythema exudativum multiforme ; high fever ; improvement ; recurrence ; pains in the joints ; arthritis in one finger.

Case 14.—Man aged 57, from twentieth year every few months attacks of vomiting nausea, and abdominal pain, associated with outbreaks of urticaria; no hæmorrhages from the mucous membranes ; final attack with purpura and urticaria ; much vomiting and profuse and fatal hæmorrhage from the stomach, with blood in the urine and passage of blood by the stools.

Case 15.—When a lad, one attack of hemiplegia with a aphasia lasting for a week ; within a year five or six attacks of transient hemiplegia ; history of migraine in 1896, and a mild attack of rheumatism ; angioneurotic œdema of the upper lip ; outbreaks of urticaria ; in 1897, attack of abdominal colic with pains in the legs and an outbreak of purpura and urticaria ; in 1898, hæmaturia and albuminuria.

Case 16.—For three months attacks of pain in the abdomen with vomiting ; swelling of the joints ; purpura ; recovery.

Case 17.—Following influenza, in January, attacks of arthritis with cramps in the abdomen and an outbreak of urticaria ; eight attacks between January and May ; during stay in hospital, swelling of wrists and back of hand ; erythema ; urticaria, spontaneous and factitious ; no purpura ; recovery.

Case 18.—During first year swelling of the knees ; from second to seventh year, frequently recurring attacks of pain in the abdomen with vomiting and with swelling of the knees, but no skin rash ; following vaccination attack of great severity with extensive lesions of erythema, purpura, and urticaria ; melæna ; recovery ; recurrence of the skin lesions ; enlargement of the spleen.

Osler. in his analysis of the symptoms, considers first the visceral manifestations, of which the gastro-intestinal crises were the most constant

and most distressing though not the most dangerous. They took the form of colic, either alone or associated with vomiting, with both vomiting and diarrhœa, or with melæna or hæmatemesis. The attacks were, as a rule, accompanied by some one of the forms of skin lesion, often by several. The author thinks "it is reasonable to suppose that the lesions causing the pain in the abdomen are associated with the formation of wheals and swelling in the mucous membrane of the stomach and intestines," and quotes several authors who hold the same opinion with regard to the origin of such attacks.

Acute nephritis occurred is six cases and chronic nephritis in one, while the fatal termination was brought about in two by this complication. Hæmorrhages from the mucous surfaces occurred in six cases, most frequestly from the bowels. In two of the cases the occurrence of cerebral symptoms (recurring hemiplegia in one), immediately preceding the crises and skin lesions, led the author to attribute their origin to "changes in the brain of essentially the same nature as those which subsequently occurred in the lips and skin." Although in only one case of this series was there a pulmonary complication, reference is made to the association which has been noted between urticaria and asthma.

In connection with the skin lesions, the author points out that they vary widely from time to time in the same individual, or again they may be absent and the recurrent attacks for a time be evidenced only by the visceral manifestations. Arthritic symptoms, the various forms of which have been already referred to, occurred in ten of the eighteen cases. In one case a polyarthritis of great severity simulated acute rheumatic fever.

In discussing the "mutual relations of the members of the erythema group," Dr. Osler draws attention first to the affinity between "exudative erythema, Henoch's purpura, peliosis rheumatica, urticaria, and angio-neurotic œdema," as shown by "(1) the simularity of conditions under which they occur, (2) the identity of the visceral manifestations, and (3) the substitution of these affections for each other in one and the same patient at different times." Widely different conditions seemed to be the exciting causes of the disease in his series of cases; so much so that it was impossible to classify them etiologically. He does not look upon the arthritis as necessarily of rheumatic origin. Schönlein's peliosis rheumatica and Henoch's purpura, he thinks, may be regarded as hæmorrhagic types of an exudative erythema. Angio-neurotic œdema should certainly be classed as one of the forms of the erythema group.

The author, in concluding this extremely interesting paper, very pertinently remarks "What is needed, in truth, is a dermatological Linnæus, to bring order out of the chaos at present existing in the group of erythemas."

G. G. Campbell.

Pediatrics.

UNDER THE CHARGE OF A. D. BLACKADER.

Purulent Vaginitis in Children.

Charles A. Rosenwasser, M.D. "Remarks upon the Diplococci Resembling Gonnococci found in the Normal Vagina of Children." *Archives of Pediatrics, July, 1900.*

Physicians connected with out-patient hospital work among children are often struck with the large number of cases of purulent or mucopurulent discharge from the vagina in young female children. It occurs more often perhaps in those whose general condition is below par, but in a majority of instances the cause cannot be detected. Rosenwasser, in this article, points out that the matter is worthy of more careful investigation. His attention was called to the subject by the occurrence of three cases in the Mount Sinai Hospital of supposed true gonorrhœa, for which a careful investigation failed to discover any source of infection.

On looking into the previous work done on the subject, he found that a diplococcus, resembling the gonococcus but not decolourising by Gram, had been found in the apparently healthy urethra of males and vagina and urethra of females, by many independent investigators. In the three cases under his care, spreads showed the presence of extra-cellular cocci, diplococci and bacilli as well as intracellular organisms of like morphology which did decolourise by Gram, as well as many which did not. He thinks that, as the gonococcus is acknowledged to be subject to many variations in form, it is likely that the condition in some cases of vaginal discharge is caused by an attenuated or not fully developed gonococcus, which does not fully react to Gram; and suggests that future investigations may show that these micro-organisms are but different stages in the development of one organism, in other words that these cases of purulent vaginitis are in reality gonorrhœal in origin. It seems to us that the difficulty in accounting for their occurrence etiologically is not lessened by this explanation.

An Antitoxin for Scarlet Fever.

William J. Class, M.D. "Scarlatina, Some Further Experiments." *Philadelphia Medical Journal, June 23, 1900.*

Class considers that the germ described by him and named the diplococcus scarlatinæ has been conclusively demonstrated by the subsequent

investigations of Gradwohl, Jacques, Page and others, to be the specific causative factor in scarlet fever. He accordingly set to work to try and obtain an antitoxin, and in this paper describes a series of experiments undertaken with this end in view.

A culture obtained from the throat of a person suffering from scarlatina the day before the rash developed, was found to contain the diplococci almost free from contamination by other germs. A toxin was obtained from this by straining through porcelain a culture grown for ten days on bouillon. Inoculations showed the toxin to be very virulent. Class then selected a sow weighing 25 pounds as the animal on which to commence his experiments, using this animal on account of the known susceptibility of swine to scarlet fever. The first injection of 1 cc. of the filtered culture produced a rise of temperature of 2° F. in 24 hours, with general malaise, refusal of food, and great thirst; but in a few days the animal had entirely recovered. A second injection of double the dose produced similar results, and a third likewise, until, after a fourth injection of five times the original dose, there was only $\frac{1}{2}°$ of rise in temperature. The animal was then bled, and after the blood had stood for 48 hours, a clear, reddish serum was obtained.

Four experiments were performed to test the efficacy of this as an antitoxin. For each experiment two guinea pigs were used, one animal receiving the germ alone, the other the germ plus the serum. Six of the eight animals received injections of 1 cc. of the original culture and three of these 1 cc. of the serum as well. All of those unprotected by the serum died in from six to fourteen days, while those receiving the antitoxin recovered with but slight reaction. In the other two cases, 0.1 cc. of a culture made from the liver of one of the unprotected animals was used, and only 0.5 cc. of the antitoxin was injected into one of these. Both animals died, the one not receiving the antitoxin in 15 hours, the other in 36 hours. The injections were all intra-abdominal.

Class does not claim to have produced an antitoxin that will do for scarlet fever what diphtheria-antitoxin has done for diphtheria. He admits that his claim to have discovered the specific germ of the disease is not as yet accepted by the profession. It is his intention, however, to make use of some of this product in the first suitable case of scarlatina that presents itself, and the results will be awaited with interest.

Glandular Fever Associated with Erythema Nodosum.

Bertram Thornton, M.R.C.S., L.R.C.P. "A Case of Glandular Fever Associated with Erythema Nodosum." *British Medical Journal, April 14, 1900.*

Thornton reports this case as suggesting a possible explanation of the etiology of glandular fever.

The patient, a healthy girl aged 5½ years, with a family history free from tubercle or rheumatic fever, had had a vague indisposition in the previous year and first came under notice by the accidental discovery of a mitral systolic murmur. Eight months after this she was taken ill with pain and enlargement of the glands in the anterior triangle of the left side of the neck. The temperature rose to 102° F. On the second day the glands on the right side became involved also, and a rise of temperature to 104° followed. On the fourth day, erythema nodosum made its appearance on the legs, and the eruption followed the usual course. The appearance of the erythema nodules was not accompanied by any special constitutional symptoms beyond those already present with the glandular fever. After a fever lasting 26 days, the nodules disappeared and the glands began to subside. Several features of the case suggested rheumatism, notably, early and marked anæmia, and perspiration of a distinctly rheumatic character. Sodium salicylate was given as soon as the erythema appeared, but without apparent benefit.

Thornton suggests that the poison of rheumatism may be one of the causes of the so-called glandular fever.

Kernig's Sign in Infants.

Fredrick A. Packard, M.D. "A Note upon Kernig's Sign in Infants." *Archives of Pediatrics, April, 1900.*

Packard alludes first to the frequency with which infants and young children suffer from meningitis. No less than three per cent. of 2,532 children admitted to the Children's Hospital of Philadelphia, between the years 1895 and 1899, were cases of this disease. He points out that the difficulty of making an absolute diagnosis is often great, and anything that would enable one to come to a positive conclusion would be invaluable. While the presence of this sign is a valuable aid to diagnosis, it must be remembered that its absence does not exclude meningitis.

Three cases are reported, one four months old and two of sixteen months in which there were during life unmistakable symptoms of meningitis but entire absence of Kernig's sign during the whole of the period of observation, although it was looked for every day. At the autopsies, two of the cases showed the presence of tuberculous meningitis and the third of a diffuse leptomeningitis, with thrombosis of a vein over the occipital lobe. Another case is reported to show that hypertonia can exist in infancy. It was that of an infant four months old in whom the whole body could be lifted from the bed by placing the hands under the heels.

Packard disclaims any intention of belittling the value of Kernig's

sign in the diagnosis of meningitis in the adult and older children, but having shown its absence in these three cases in infants, he thinks that the age limit, below which it is not reliable, should be determined.

Chorea.

JOHN LINDSAY STEVEN, M.D. "An Analytical Study of Certain of the Clinical Phenomena Observed in 112 Consecutive Cases of Chorea." *Archives of Pediatrics, March, 1900.*

These cases were collected from the dispensary of the Glasgow Royal Infirmary, the out-patient room of the Royal Hospital for Sick Children, Glasgow, and the wards at the Royal Infirmary. Eighty-seven cases were observed in the out-patient room and 25 in the wards.

Sex.—The out-patients showed about 1 male to 3 females while the ward cases gave a proportion of 1 to 4.

Age.—The greatest number of cases occurred between the ages of five and fifteen. Under five and over fifteen the disease is rare.

Number of attacks.—In 43 per cent. there had been more than one attack; in one case no less than 6; in 4 each, 4 and 5 attacks; while 7 had had 3 attacks.

Duration of the attacks.—The cases treated in the wards were naturally the most severe and of the longest duration. More than half the out-patient cases lasted under two months, and the ward cases less than three months.

The Cause of attack.—With regard to exciting causes, 30 cases gave definite statements and 26 of these might be classed as "emotional." (This is the first point in which the findings of Dr. Steven do not agree with the generally accepted opinion, and we think it can be partially explained by concluding that in the 61 in which no exciting cause was given, none was present. Even then, however, a percentage of 30 is perhaps remarkable.) In the 25 ward cases, no cause could be assigned in 16.

Family History.—In about 50 per cent. a family history of rheumatism, chorea, or some form of nervous disease was obtained.

Association with Rheumatism and other morbid states.—A history of antecedent rheumatism was present in about 50 per cent. of the cases in which this point could be definitely determined. In only one case was the author able to detect subcutaneous nodules, and he gives it as his opinion that they are extremely rare in Glasgow, both in rheumatism and chorea. The other diseases associated with the attacks of chorea were so few in number that they must be looked upon as accidental complications.

Condition of the Heart.—In 31 per cent. of the out-patient cases there

was definite evidence of valvular disease, far the greatest number having a mitral systolic murmur. In the ward cases a much larger proportion was noted, 60 per cent. This is explained by the fact that only the most severe cases of chorea were admitted.

Condition of the Urine.—Four out of 65 in which this point was investigated, had albumin in the urine. There is nothing in the report to show whether this was merely a transient albuminuria or associated with changes in the kidneys. There was no evidence of an excess of waste products, which the author states he would have expected from the excessive muscular movements.

Distribution and Severity of the Movements.—These are classed as general, right-sided and left-sided; and as severe, moderately severe, and slight. Taking all the cases together, it is seen that the majority are moderately severe with general movements. Of cases of hemichorea, the right side was involved slightly more frequently than the left.

In conclusion the author states that although he is able to present no statistics on the subject, he agrees with Osler's statement:—"Psychical disturbance is rarely absent in chorea, fortunately in the majority of cases it is slight in degree."

Reviews and Notices of Books.

THE MEDICAL REVIEW (MEDICAL AND SURGICAL REVIEW OF REVIEWS). An Indexed and Illustrated Monthly Summary of all that is important to the Practitioner in the Medical Periodicals of the World. Edited by NATHAN E. BOYD, M. D. Volume II, January, December, 1899. London.

This new review, the bound volume of which for the year 1899 makes a most valuable addition to any library, has maintained the high standard set by the first few numbers. The object for which it strives is well expressed in a paragraph printed upon the page opposite to the title page, and which we here reproduce. "By the suppression of all unessential matter, a paper written with any definite object—and such alone is valuable—can generally be compressed into a comparatively brief report, and yet remain a clear and readable account of the subject, so that nothing of importance is lost, and often, in lucidity, much is gained. Merely to mention a few of the leading features of an article serves no useful purpose." That almost all the best medical periodicals now contain a separate department in which the most valuable articles from contemporary journals are synoptised, shows that their readers appreciate the value of these condensed reports. The space allowed for such purposes is, however, necessarily limited and articles cannot receive the same prominence they do in a journal such as the *Medical Review*, devoted entirely to this work.

The articles reviewed in the *Medical Review* have been selected with great care and each number fairly represents the most important recent papers from the medical periodicals of the world. In quite a number of instances the original illustrations are reproduced. Each number contains also a list of new books published during the month, including foreign as well as domestic literature. We have much pleasure in recommending the volume to all who are interested in the progress of medical science.

ANÆSTHETICS: THEIR USES AND ADMINISTRATION. By DUDLEY WILMOT BUXTON, M.D., B.S., Member of the Royal College of Physicians; Ex-President of the Society of Anæsthetists, etc., etc. Third Edition. London: H. K. Lewis, 1900.

This well known book has been for some time out of print and we are glad to see that the author in issuing a third edition has thought wise to practically re-write a great part of it and thus bring it up to date, so

that in this edition we have what could truthfully be said of the two former ones, probably the best manual on anæsthetics in the English language. Over the much debated question of the superiority of either of the two principal anæsthetics, the author has always been most moderate in his views, holding that each has its own proper sphere and refusing to be classed himself as either an out and out etherist or chloroformist. This adds very much to the value of his work which discusses the merits of each in an unprejudiced way.

The book opens with a most readable chapter on the history of anæsthetics from the earliest times. Then follows a chapter on the preparation of the patient and the choice on an anæsthetic, the latter part of the subject being determined by the condition of the patient and the necessities of the operation. For routine work in healthy subjects, "ether, either in succession to nitrous oxide according to Clover's method, or given by itself, is the best and safest anæsthetic for general purposes alike for adults and children, and should be adopted as the routine method of producing unconsciousness before operations." An exception is made for infants, the aged, and pregnant women, as bearing chloroform equally well but not better than ether. Diseases of the respiratory tract and operations about the upper air passages demand chloroform. In pleural effusions all anæsthetics are badly borne. Heart disease is only to be taken into account when there is evidence of loss of compensation, under which condition chloroform is recommended, so also in arterial disease. Under other conditions ether is preferable. In states of collapse, as after railway accidents and conditions of low vitality, ether is much the better on account of its stimulant action. Buxton does not agree with the majority of English anæsthetists who prefer chloroform in abdominal operations, he considers that ether answers equally well and is safer.

In the chapter on Nitrous Oxide a full description is given of the newer method of giving it with oxygen gas for more prolonged operations than is possible with the gas alone. Under ether, the preference is given to a modification of the well known Clover's inhaler devised by the author, as the most convenient means of administration. The advantage of this instrument is that it can be completely disconnected and cleaned, the parts fitting together by a series of bayonet fastenings. The article on the administration and dangers, etc., of chloroform is very full and due weight is given to the importance of recognizing that chloroform is never free from danger. Buxton does not accept the findings of the Hyderabad Commission, as determining that the only danger to be apprehended in chloroform anæsthesia is from failure of the respiration, but believes in primary heart syncope, as indeed do all practical anæsthetists.

The work contains chapters also on the less commonly used anæs-

thetics, anæsthetic mixtures, anæsthetics in special surgery, in obstetric practice, the accidents of anæsthesia, local anæsthesia, and the medico-legal aspects of the administration. It is fully illustrated with wood cuts of the various forms of inhalers, gags, and other accessories and will be found especially valuable to any young practitioner who is called upon to select and administer anæsthetics to a large number of people.

G. G. C.

The International Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. By Thirty-nine Contributors. 1900, Eighteenth Year. New York, E. B. Treat & Co. Price, $3.00.

This volume, as in former years, contains several valuable original contributions, among which may be mentioned "Malarial Fever," by Major Ronald Ross, giving the facts so far as known concerning the musquito origin of malaria; "Mycetoma," by Lieut.-Col. W. Keith Hatch, of Bombay, with a report of 76 cases admitted to one of the Bombay hospitals within the last twenty years. This article is illustrated by seven valuable plates. "Sinusitis," by P. Watson Williams, is a well written article on the differential diagnosis of inflammations of the accessory cavities of the nose; it is illustrated by three plates showing the position of the different cavities. Fifty pages are allotted to new methods of medical and surgical treatment in stomach diseases, by Boardman Reed, of Philadelphia. Keith W. Monsarrat writes on the pathology of "Cancer," describing his own experiments and observations on the supposed parasite of the disease.

The volume contains a larger amount of original matter than in any previous issue and the usual "Notes on Legal Decisions, Sanitary Science, Books of the Year," etc., of previous volumes.

Injuries to the Eye in their Medico-Legal Aspect. By S. Baudry, M.D., Professor in the Faculty of Medicine, University of Lille, France, etc. Translated from the original by Alfred James Ostheimer, Jr., M.D., of Philadelphia, Pa. Revised and edited by Charles A. Oliver, A.M., M.D. Attending Surgeon to the Wills Eye Hospital, etc. With an adaptation of the Medico-Legal Chapter to the Courts of the United States of America, by Charles Sinkler, Esq., Member of the Philadelphia Bar. 5⅝ x 7⅝ inches. Pages, x—161. Extra Cloth, $1.00, net. The F. A. Davis Co., Philadelphia, Pa., 1900.

Professor Baudry's book has attained a high reputation abroad, which we feel sure will be extended to the translation by this continent. It deals individually with the medico-legal questions arising in connection

with injuries of the eyelid, conjunctiva, cornea, lens, etc., and, finally, with trauma involving the entire eyeball. There is a chapter on simulation and exaggeration of visual defects.

Professor Baudry gives a number of interesting personal cases, where compensation was claimed for conditions not due to injury and antedating it; and his medico-legal reports might well serve as models of style and matter. The bibliography, especially on simulations, is excellent. If we have a criticism to make it is that while he deals with many intricate medico-legal problems in a masterly manner and teaches us how to detect and baffle the most subtle forms of guile, he is quite silent as to the basis on which genuine and undisputed lesions or visual defects should be compensated, even when of the simplest nature. In this respect the German authors on the subject are more satisfactory.

The translation is remarkably well done, but the chapter by Chas. Sinkler, Esq., of the Philadelphia Bar, consists of irrevelant twaddle about expert testimony, which hardly repays perusal. *W. J.*

A Practical Treatise on Sexual Disorders of the Male and Female. By Robert W. Taylor, A.M., M.D., Clinical Professor Veneral Diseases at the College of Physicians and Surgeons (Columbia University), New York, etc., etc. Second Edition. Thoroughly Revised. With 91 illustrations and 13 plates in colour and monochrome. Lea Brothers & Co., New York and Philadelphia. Price, $3.00.

We are glad to see another edition of this popular work. Too many of this class of books treat the subject of sexual disorders in a slipshod way without any attempt to do more than enumerate the symptoms for which they give general directions as to treatment. Dr. Taylor describes first the anatomy and physiology of the whole sexual apparatus in a scientific and philosophical manner and throughout the whole work as much attention, as the knowledge of the subject will allow, is paid to pathology.

After devoting 75 pages, well illustrated by numerous drawings and plates, to the anatomy and physiology, the author discusses, in ten chapters, psychical, symptomatic, atonic and organic impotence in the male. The next five chapters treat of sterility in the male, a condition which the author thinks is much more common than is generally supposed and to which too little attention is given in most text-books.

The chapters on chronic inflammation of the various portions of the urethra and of the prostate gland are very thoroughly treated and the same may be said of varicocele and of diseases of the seminal vesicles.

Sexual disorders of the female necessarily do not receive the same attention in a work of this kind that they do in some of the larger works on

gynæcology, indeed, the author refers the reader to the text-books of women's diseases for further information on some parts of the subject. The new growths and hypertrophies of the vulva, which may be the cause of sterility, are fully described and the appropriate treatment indicated. A chapter, illustrated by half a dozen cuts, is devoted to the description of two cases of a peculiar form of new growth which Dr. Taylor is the first to describe.

We can recommend the book to all who have to do with the distressing class of cases with which this work treats, and what general practitioner does not occasionally meet with them?

LETTER, WORD AND MIND BLINDNESS. By JAMES HINSHELWOOD, M.A., M.D., F.F.P.S., Glasgow, Surgeon to the Glasgow Eye Infirmary. London: H. K. Lewis, 136 Gower street, W.C., 1900.

This interesting little work deals with special forms of visual aphasia. The first chapter is devoted to visual memory; the second to letter word, and mind blindness; the third to a case of partial mind blindness with dyslexia; the fourth to word without letter blindness and the fifth to letter without word blindness. The author has been fortunate in having under observation a series of very pure cases of visual aphasia, that is, unaccompanied by derangements of the other special centres. He has studied them very thoroughly, and although he has no post-mortem evidence to prove the correctness of his deductions, few we believe will doubt them.

Although the subject is one of difficulty, still the clearness with which the author's views are expressed, makes the volume very interesting and pleasant reading. *J. S.*

LEA'S SERIES OF POCKET TEXT-BOOKS — NERVOUS AND MENTAL DISEASES. A Manual for Practitioners and Students. By CHARLES S. POTTS, M.D., Instructor in Nervous Diseases, University of Pennsylvania, Assistant Neurologist to the University Hospital, Philadelphia. Series edited by BERN B. GALLAUDET, M.D., Instructor of Anatomy and Instructor in Surgery, Columbia University, New York. Illustrated with eighty-eight engravings. Philadelphia and New York: Lea Brothers and Co., 1900. Price, $1.75.

Lea's series of pocket text-books fill a very important place in medical literature. They are not only adapted to meet the needs of the medical student, but also meet in many ways the often pressing needs of the busy practitioner.

The volume on the Nervous System is no exception to this statement.

The work is well written, well printed and well illustrated. The author evidently understands his subject, and has given us a trustworthy guide to both nervous and mental diseases. *J. S.*

Les Alienes devant la Loi. Etude Médico-légale par le Dr. Geo. Villeneuve, Professeur adjoint de médecine lègale et de médecine mental a l'Université Laval de Montréal ; Surintendant Médical de l'Aisle d'Aliénés de St. Jean de Dieu, Longue Pointe, etc.

The author has republished in book form a series of articles published during the last few years in *L'Union Médicale.* It forms a comprehensive survey of the legal bearings of insanity from every point of view, and is divided into :—(1) criminal relations, (2) commitment to asylums, (3) civil relations of the insane, with a summary of the existing laws on the subject and the various forms and certificates made use of. The special legal points of importance and features of individual forms of mental disease are also dealt with.

Besides thus forming a practical guide to many questions with which any medical man may be confronted, it contains a number of interesting personal observations and illustrative cases. The book is a most useful one and we hope it may be translated into English, as we have at present no work in our own language applicable to the conditions existing in this province. *W. J.*

Saunders' Question-Compends—Essentials of Diagnosis. By Solomon Solis-Cohen, M.D., Professor of Clinical Medicine and Therapeutics in the Philadelphia Polyclinic, etc., etc., and Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Illustrated. Second Edition. Revised and Enlarged. Philadelphia, W. B. Saunders, 1900. Canadian Agents, J. A. Carveth and Co., Toronto. Price, $1.00.

The second edition of this number of the series of Saunders' Question-Compends contains considerable additional matter, and is brought up to date in regard to the more recent methods of exact diagnosis introduced since the appearance of the first edition, although there is no description of how to perform these methods of clinical diagnosis. After a chapter on the principles and methods of diagnosis in general, the various diseases are taken up seriatum, and a short description given first of the salient features that serve to distinguish each, and this is followed by a paragraph on the differential diagnosis from each of the diseases which might be confounded with the one in question. The book will be found of service to the practitioner as well as the student, depicting as it does in a few words the symptoms or groups of symptoms upon which reliance is to be placed in distinguishing between two somewhat similar affections.

The Transactions of the Society of Anæsthetists. Volume II. London, Published for the Society by the Medical Publishing Company, Limited, 1899.

This volume contains the papers and discussions for the year 1898-99,

some of which are of very great interest. We have already reviewed in the retrospect department of this JOURNAL the discussion on "The Choice of an Anæsthetic." Besides this, we have to note a paper by Professor William Ramsay on "Pure Anæsthetics," which deals with the impurities of chloroform and their effect upon anæsthesia, and several papers on the use of nitrous oxide gas, with oxygen, in an open inhaler, and with an apparatus which admits of the anæsthesia being kept up for prolonged operations.

TEXT-BOOK OF DISEASES OF WOMEN. By C. B. PENROSE, M.D., Ph.D., Professor of Gynæcology in the University of Pennsylvania; Surgeon to the Gynæcological Hospital, Philadelphia, etc. Third Edition. Illustrated. W. B. Saunders, Philadelphia, 1900. Canadian Agents, J. A. Carveth & Co., Toronto. Price, $3.75.

The publication of three editions of this work is the best proof of its excellence and usefulness. Some new matter has been added to the second edition, and all that the reviewer can say is that the work has been brought up to date and is in no way behind the two preceding editions.

F. L.

A MANUAL OF THE PRACTICE OF MEDICINE PREPARED ESPECIALLY FOR STUDENTS. By A. A. STEVENS, A.M., M.D., Professor of Pathology in the Woman's Medical College of Pennsylvania, etc., etc. Fifth Edition, Revised and Enlarged. Illustrated. Philadelphia, W. B. Saunders, 1898. Canadian agents, J. A. Carveth & Co., Toronto. Price, $2.00.

The fifth edition of this small "manual" of the practice of medicine would tend to show that such works are appreciated by the profession. The impossibility of condensing what a practicing physician requires to know about medicine into 500 small octavo pages does not seem to us to augur well for the patients, who will trust themselves to the embryo doctor deriving his knowledge of medicine from this book. It no doubt enables the student to cram for examinations in the shortest possible time and this in all probability accounts for its popularity. Though the book may be an excellent one of its kind, this class of short cuts to knowledge is not to be recommended.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK, JAMES STEWART,
A. D. BLACKADER, J. GEORGE ADAMI,
GEO. E. ARMSTRONG, G. GORDON CAMPBELL,
WILLIAM GARDNER, FRANK BULLER,
F. G. FINLEY, H. A. LAFLEUR,

WITH THE COLLABORATION OF

WYATT JOHNSTON. T. J. W. BURGESS, H. S. BIRKETT,
C. F. MARTIN, J. W. STIRLING, J. C. WEBSTER,
J. M. ELDER, F. A. L. LOCKHART, KENNETH CAMERON,
D. J. EVANS, W. F. HAMILTON, C. W. WILSON.
A. E. GARROW, E. J. SEMPLE A. G. NICHOLLS.

VOL. XXIX AUGUST, 1900. No. 8

THE ATTENDANCE AT MEDICAL ASSOCIATIONS.

The attendance of medical men at medical associations is too small. This is generally conceded. Why is it? Some general practitioners when asked this question, reply that the meetings are too technical; that the papers for a great part are read by specialists and hospital men upon subjects that have to the general practitioner very little interest; that rare diseases are discussed and cases reported that are unique, curious and for which very little can be done anyway.

That there is perhaps some truth in these reasons for infrequent attendance *may be conceded.* But if the general practitioner would come forward with papers on subjects in which he is interested, if he would introduce discussions on diseases that cause him anxiety and concerning which he would like to compare notes with his confrères, if he would report the rare and curious cases that he has seen and which would be of interest to everyone; then there would be fewer so-styled ultra scientific papers. That the fault lies partly with the general practitioner *must be conceded.*

There is no man in the community who needs an occasional holiday

more than the busy physician, and no man more thoroughly deserves it or can better enjoy it. No physician can attend a gathering of his confrères, for the consideration of professional subjects and interests, without getting good and doing good.

Of course, the duties of the physician are sacred and imperative and there are times when he cannot, in justice to those who depend upon him in sickness, leave his practice even for a day ; but we feel sure that more might do so than do.

The attendance at the Canadian Medical Association of only ten per cent. or even less of the profession of the Dominion, shows, we fear, lack of interest more than devotion to duty, and we would urge that the coming meeting in Ottawa be largely attended. The programme is most attractive, the meeting gives promise of being one of the most interesting, scientifically, in the history of the association, and it is the opportunity we have of meeting the members of our profession from the different provinces.

CANADIAN MEDICAL ASSOCIATION.

Ottawa Meeting.

The outlook is bright for a delightful meeting of the Canadian Medical Association at the capital city this year. A most suitable date, September 12th to 14th, has been chosen, and the committee has been singularly fortunate in its selection of the readers of the addresses. Mr. Owen, of London, England, is well known by reputation to all Canadians and personally to not a few, and will be enthusiastically welcomed, while Dr. Shattuck is no stranger to us, and worthily represents our brethren from across the line.

The profession of Ottawa are noted for their hospitality and visiting members may expect to be royally entertained, as we learn that many and complete are the preparations now in hand to make them remember the 1900 meeting.

The local committee are desirous of obtaining the names in advance of all those who propose to be present in order to facilitate their arrangements. Intending visitors should notify Dr. R. W. Powell, of Ottawa.

The following is a provisional list of papers. Any one who has not already sent in the title of his paper should do so at once to the Secretary, Dr. F. N. G. Starr, Biological Department, Queen's Park, Toronto.

(1) Address in Surgery—Edmund Owen, M.B., F.R.S.C., London, England.

(2) Address in Medicine—F. Shattuck, M.D., Harvard University.

(3) Address in Gynæcology—William Gardner, M.D., Montreal.

(4) Gall-Stone Cases—Arpad Gerster, New York.

(5) Title to be announced—N. Senn, Chicago.

(6) The Recognition and Management of Tabes Dorsalis—Allan McLane Hamilton, New York.

(7) A Case of Endothelioma of the Omentum, Operation, etc., and Meningocele, Operation, etc.—W. H. Klock, Ottawa.

(8) The proposed Ontario Bill for the Treatment of Inebriates—A. M. Roseburgh, Toronto.

(9) The Modern Treatment of Retroversion and Prolapse of the Uterus—A. Lapthorn Smith, Montreal.

(10) Treatment in Typhoid Fever—W. B. Thistle, Toronto.

(11) Gastric Hæmorrhage—G. E. Armstrong, Montreal.

(12) Some Cases in Stomach Surgery: Gastrotomies, two cases; Gastro-enterostomies, two cases; Pylorectomy—A. E. Garrow, Montreal.

(13) Gangrene of the Leg following Typhoid Fever—H. H. Chown, Winnipeg.

(14) Title to be announced—N. A. Powell, Toronto.

(15) Notes on the Therapeutic Value of Hot Air—C. F. Martin and B. D. Gillies, Montreal.

(16) Title to be announced—J. Clarence Webster, Chicago.

(17) Title to be announced—H. H. Beemer, Mimico.

(18) Notes on Atropine—R. D. Rudolf, Toronto.

(19) Gasoline as a Surgical Detergent—B. L. Riordan, Toronto.

(20) The Successful Treatment of Two Important Cases of Diseases of the Eyes by the combined methods of mercury and iodide of potassium internally and pilocarpine hypodermically—G. H. Burnham, Toronto.

(21) Our Race and Consumption—Sir James Grant, Ottawa.

(22) The Physician's Vaster Empire—John Hunter, Toronto.

(23) Some Experiences in the Treatment of Hernias—F. J. Shepherd, Montreal.

(24) Notes of a Case of Tuberculous Disease of the Tubes with Acute Peritoneal Infection—H. A. Bruce, Toronto.

(25) The Summer Health Resorts of the River and Gulf of St. Lawrence—E. H. Adams, Toronto.

(26) Empyema, with a study of Thirty Cases from the Clinical and Bacteriological Standpoints—W. F. Hamilton, Montreal.

(27) Physical Training, Its Range and Usefulness in Therapeutics—B. E. McKenzie, Toronto.

(28) A Case of Traumatic Neurasthenia—B. Campbell Myers, Toronto.

(29) Adenoids in Private Practice, A Report of 100 Cases—P. G. Goldsmith, Belleville.

(30) Recent Pathological Studies of the Blood—L. H. Warner, Brooklyn.

(31) A Case of Syphilitic Gummata of the Spinal Cord Successfully Treated by Enormous Doses of Iodide of Potassium—F. W. Campbell, Montreal.

(32) Dilatation and Prolapse of the Stomach—A. McPhedran, Toronto.

(33) Tendon Transplanting in Paralytic Deformities—Clarence L. Starr, Toronto.

(34) Some Marked Symptoms attending Hypertrophy of the Lingual Tonsil—H. D. Hamilton, Montreal.

A meeting of the graduates of McGill University, residing in the Maritime Provinces, was held in St. John, N.B., July 18th, 1900, when "The Maritime Graduates Society of McGill University" was formed in lieu of the Provincial societies now existing, and the following officers elected :—

President, Dr. W. H. Hattie, Halifax, N.S.; 1st Vice-President, Dr. J. H. Scammell, St. John, N.B.; 2nd Vice-President, Dr. H. D. Johnson, Charlottetown, P.E.I.; 3rd Vice-President, Dr. Hugh Ross, Stellarton, N.S.; Secretary-Treasurer, Dr. G. G. Corbet, Musquash, N.B.

Executive Committee—Dr. J. G. McDougall, Amherst, N.S.; Rev. Robert Laing, Halifax, N.S.; Dr. St. C. J. Gallant, Charlottetown, P.E.I:; Dr. Alex. McNeil, Kensington, P.E.I.

Next meeting will take place the evening before the Maritime Medical Society meets in Halifax, N.S., 1901.

NEW BOOKS, ETC., RECEIVED AND NOTED.

W. B. Saunders, Philadelphia.

Saunders' Medical Hand Atlases. Atlas and Epitome of Operative Surgery. By Dr. Otto Zuckerkandl. Authorized Translation from the German. Edited by J. Chalmers DaCosta, M.D. 1899.

The Surgical Treatment of Tumours. By N. Senn, M.D., Ph.D., LL.D. Second Edition. 1900.

The Treatment of Fractures. By Charles Locke Scudder, M.D., assisted by Frederick J. Cotton, M.D. 1900.

A Handbook for Nurses. By J. K. Watson, M.D., Edin. American Edition under the supervision of A. A. Stevens, A.M., M.D. 1900.

Saunders' Question Compends. Essentials of Diagnosis. By Solomon Solis-Cohen, M.D., and Augustus A. Eshner, M.D. Second Edition. 1900.

Saunders' Medical Hand-Atlases : Atlas and Epitome of Special Pathologic Histology. By Docent Dr. Hermann, Durck. Authorized Translation from the German, edited by Ludwig Hectoen, M.D. 1900.

Fractures. By Carl Beck, M.D. 1900.

Lea Brothers & Co., New York and Philadelphia.

A Practical Treatise on Sexual Disorders of the Male and Female. By Robert W. Taylor, A.M., M.D. Second Edition. 1900.

A Text-Book of the Medical Treatment of Diseases and Symptoms. By Nestor Tirard, M.D., Lond., F.R.C.P. Adapted to the United States Pharmacopœia by E. Quinn Thornton, M.D. 1900.

Lea's Series of Pocket Text-Books. Chemistry and Physics. Walton Martin, Ph.B., M.D., and William H. Rockwell, Jr., M.D. 1900.

Progressive Medicine. Vol. II. June, 1900.

A Text-Book of Practical Therapeutics. By Hobart Amory Hare, M.D., B.Sc. 1900.

A Dictionary of Medicine and the Allied Sciences. By Alexander Duane, M.D. 1900.

A Manual of Operative Surgery. By Lewis A. Stimson, B.A., M.D. Fourth Edition. 1900.

Little, Brown & Company, Boston.

Surgical Anæsthesia. Addresses and other Papers. By Henry Jacob Bigelow, A.M., M.D., LL.D. 1900.

Orthopedic Surgery and other Medical Papers. By Henry Jacob Bigelow, A.M., M.D., LL.D. 1900.

The Mechanism of Dislocations and Fracture of the Hip. Litholapaxy or Rapid Lithotrity with Evacuation. By Henry Jacob Bigelow, A.M., M.D., LL.D. 1900.

A Memoir of Henry Jacob Bigelow, A.M., M.D., LL.D. 1900.

William Green & Sons, Edinburgh.

Encyclopædia Medica. Under the General Editorship of Chalmers Watson, M.B., M.R.C.P.E. Volume I. 1899.

Philadelphia Medical Publishing Company.

Suggestions to Medical Writers. By George M. Gould, A.M., M.D. 1900.

J. A. Carveth & Co., Toronto.

Post-Mortem Examinations. Methods and Technique. By John Caven, B.A., M.D. 1900.

H. K. Lewis, London.

Medical Electricity: A Practical Hand-Book for Students and Practitioners. By H. Lewis Jones, M.A., M.D. Third Edition. 1900.

Simpson, Marshall, Hamilton, Kent & Co., Limited, London.

Braithwaite's Retrospect of Medicine. Vol. CXXI. 1900.

University of Pennsylvania, Phœbe A. Hearst Foundation, Philadelphia.

Contributions from the William Pepper Laboratory of Clinical Medicine. 1900.

Mutual Life Insurance Company of New York.

Report on the Mortality Records of the Mutual Life Insurance Company of New York for fifty-six years, from 1843 to 1898. By Elias J. Marsh, M.D., and Granville M. White, M.D., Medical Directors. 1900.

Reprints, etc.

Twenty-two Reports of the Thirteenth International Congress of Medicine, Paris. W2 to 9. 1900.

Transactions of the Rhode Island Medical Society. Vol. VI., Part 1. 1899.

Report for 1898 on the Progress of Pharmacy in its Relation to the Future Revision of the British Pharmacopœia of 1898.

Remarks on Extra-Uterine Pregnancy. By Chas. P. Noble, M.D. American Gynæcological and Obstetrical Journal. March, 1900.

Remarks on Nephrectomy with a plea for the more Certain and Earlier Diagnosis of Conditions requiring it. By Charles P. Noble, M.D. Pennsylvania Medical Journal. August, 1899.

A New Method of Diagnosis of Tuberculosis of the Kidney. By Chas. P. Noble, M.D., and W. Wayne Babcock, M.D. American Gynæcological and Obstetrical Journal. December, 1899.

The Duty of State and Municipality in the Care of Pulmonary Tuberculosis Among the Poor. By Edward O. Otis, M.D. Albany Medical Annals. April, 1900.

Conditions of the Throat and Larynx simulating and predisposing to Tuberculosis. By Lennox Browne, F.R.C.S.E.

Immunity as against Heredity in Tuberculosis. By Lawrence F. Flick, M.D. The Journal of Tuberculosis. October, 1899.

The Registration of Tuberculosis. By Lawrence F. Flick, M.D. The Philadelphia Medical Journal. June 2, 1900.

The Therapeutics of Tuberculosis. By Lawrence F. Flick, M.D. The Therapeutic Gazette. Jan. 15, 1900.

Immunity the Fundamental Principle underlying all Treatment of Tuberculosis. By Lawrence F. Flick, M.D. The Journal of the American Medical Association. Oct. ,1 1898.

The Contagiousness of Phthisis. By Lawrence F. Flick, M.D. Transactions of the Medical Society of the State of Pennsylvania. June, 1888.

Ten Years' Experience with Alexander's Operation. By A. Lapthorn Smith, B.A., M.D. New York Lancet. January, 1900.

Some Observations on Pryors' Method of Removing the Fibroid Uterus. By A. Lapthorn Smith, B.A., M.D. The American Journal of Obstetrics. June, 1900.

Acute Inversion of the Uterus. By A. Lapthorn Smith, B.A., M.D. American Gynæcological and Obstetrical Journal. January, 1900.

Hæmorrhage and Circulatory Disturbances in Complicated Fracture. By Thos. H. Manley, M.D. The Medical Standard. May, 1900.

The Management of Large Congenital Exolmos—Infantile. By Thos. Manley, M.D.

On the Radical or Tentative Treatment of Piles. By Thos. H. Manley, M.D. Medical Brief. April, 1900.

On the Therapy of Feminine Hernia in the Adult. By Thomas H. Manley, M.D. The Therapeutic Gazette. Feb. 15, 1900.

Cholangiostomie—Two Cases Recovering. By B. Merrill Rickets, Ph.B., M.D. Medical Review of Reviews. December, 1899.

Rapid Treatment of Varicose Ulcers of the Leg. By W. D. H. Brown, M.D. American Tri-State Medical Journal and Practitioner. June 19, 1899.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIX. SEPTEMBER, 1900. No. 9.

Original Communications.

THE PRESIDENT'S ADDRESS.

BY

R. W. POWELL, M.D., Ottawa.

Delivered at the Annual Meeting of the Canadian Medical Association, Ottawa, Sept. 12, 1900.

Gentlemen of the Canadian Medical Association :

When you did me the signal honour to elect me to the Presidential chair of this Association I naturally felt a sense of buoyancy and elation in my unexpected and newly found distinction, but as time wore on, the sense of elevation began to diminish until the date of the meeting came within measurable distance, when I gradually became but the shadow of my former self and have just escaped, I think, a total eclipse. If you know of any of our members particularly aspiring and thought to be suffering from that peculiar and subtle form of enlargement of the cranium commonly known as "swelled head," just elect him President of this Association for one year, and if he is not rapidly and permanently cured, my capabilities as a prognosticator must be weak indeed.

So far as I am concerned I found myself groping aimlessly about and trusting that a miraculous light would penetrate the convolutions of my fast waning mental faculties, and enable me to startle you with something novel and refreshing in the way of an address, but instead of this, gentlemen, you will, I fear, have to exercise a merciful forbearance for a very limited period of time while I endeavour to touch on one or two matters that appear to me to be of general interest to us as a profession in these days through which we are passing.

It is well nigh a hopeless task, gentlemen, to even begin to thank you

for the great compliment you have paid me in selecting my name for this position, and thus to place me in the long line of distinguished men who have preceded me in this chair since Confederation.

The honours which normally fall to medical men are few and far between when their lives are spent entirely in their professional calling, but the greatest of all honours are those which come at the hands of one's fellow practitioners.

Be assured, gentlemen, your generous and unexpected action towards me is especially gratifying, and will never be forgotten. Small wonder that I have in some measure attempted to requite you by using my best efforts to bring this meeting of the closing century to a successful issue.

This Association has in the past been presided over by painstaking and distinguished men, and it is to their past efforts and their unselfish devotion to our highest interests that we owe our life as a society to-day; and I would take this opportunity of according to them our deep sense of gratitude and admiration. This Association has gone through many and trying vicissitudes. Its path has not by any means been "*couleur de rose*," but on the contrary, has many a time and oft been beset with the briers and thorns inseparable from the early and struggling life of a plant of culture and refinement. After a nurtured infancy and successful and healthy early life, it had its disorders of childhood; its ranks were depleted by that scourge of "non-attendance," which in society life is so horribly contagious, and its very life has been threatened more than once; but like many a healthy and well born youth whose constitution and habits have been good, it has survived these storms and disasters, and has risen to matured life strong in its purposes, confident in its stability and determined to fulfil its high functions.

Last year in Toronto the society evidently took a new lease of life, owing to the able Presidency of Mr. Irving Cameron and the untiring efforts of the general Secretary, Dr. Starr, also a Toronto man, aided to the full by a most capable and zealous local Committee of Arrangements.

Some 242 members registered, and it seemed to be the general opinion that never again must the interest in, and loyalty to, this Association be allowed to flag. Do you wonder, gentlemen, that I have been anxious as to the successful outcome of the meeting for 1900. Ottawa loves the Canadian Medical Association and has endeavoured in the past to show her loyalty by affording a resting place for the annual meeting. We met here in 1871, 1881, 1889 and in 1893. With the exception of the first year mentioned, 1871, when, indeed, I was in swaddling clothes, I have taken a more or less active part in the neces-

sary arrangements; but I take the greatest possible pleasure in saying to you now that never before have I seen such a unanimous desire to maintain the good reputation of the city, as has been displayed by my confrères since I announced to them the Society's decision to visit the Capital again, in this the closing year of the marvellous century, through a part of which we have all been passing. No dissentient or croaking voice has been heard, but on the contrary, the utmost loyalty has been extended to me in this my hour of trial. It is thus my labours have been lightened, and if we have in any measure afforded you collectively and individually a pleasant visit, I trust that honours will be divided and my colleagues in practice in this city will receive at your hands their just quota. We are but a handful as compared with our sister cities, the great business centres of Ontario and Quebec, but our hearts are overflowing with welcome to the members of our beloved and honoured profession from the Atlantic to the Pacific.

Shortly after our return to our homes from the Toronto meeting the country was thrown into a flutter of excitement when the diplomatic correspondence between England and South Africa was suddenly terminated by the memorable and pithy note emanating from Mr. Kruger, which set all England aflame. There was nothing for it but to resort to force as a means of backing up her reasonable demands, and so enlarged preparations were set on foot to plant the flag across the Vaal.

The world is not likely to forget the events of the autumn of 1899. From far and wide, throughout the habitable globe, wherever Great Britain holds her mighty sway, came the same dutiful appeal to the Motherland. This appeal was strong in its simplicity and earnestness. It is summed up in a few words: "Allow us to show that we are in very deed and not only in name a part of the British Empire. Let us reciprocate now for the early fostering care received during the trying days of our early existence, when we were struggling to establish something more lasting than a dependent colony." This appeal was not in vain, but was eagerly heard and allowed, and so it was that a purely volunteer contingent was mobilized, equipped and on the sea in about three weeks.

It was well known that the British Army with its organization resulting from long experience would willingly and ably attend to the medical and surgical necessities of our men in the field, but the enthusiasm had spread beyond the rank and file of the combatants, and though the personal and pecuniary sacrifice was great, yet offers came pouring in from members of our profession, tendering their services to go with "the boys" to the front. It was known that the Royal Canadian Regiment would probably only require a modest surgical equip-

ment, yet offers came from 120 surgeons to be allowed to volunteer for active service. It is only fair to record also that, to their honour be it said, over 190 trained nurses offered themselves when it became known that a nursing staff would be permitted to accompany the regiment. Very soon it transpired that certain distinguished men in civil practice in England had offered their services to the Crown for purposes of the war, and that these offers had been willingly accepted in order that the sick and wounded should have the best advantages and the most modern and skilled advice at the base hospitals.

Our Canadian confrères were eager to be allowed to go and do likewise, and it is here, gentlemen, that a page of humiliation has to be written. "You are good enough to practise on Canadians, but having no registration in Great Britain, you could not legally practise in South Africa." Our loyalty and devotion to the Empire are smothered in the mazes of legal technicality, and when the question was asked in the British House of Commons as to what position the few Canadian surgeons who were permitted to accompany their own men did occupy, the far reaching and honest reply was given, by Mr. Broderick I think, that "he really did not know, and that the matter was too complicated to admit of discussion."

Our Antipodean relations were not so treated. Up to recently they were, as you know, self-governing colonies, each being able to treat direct with the General Medical Council, and to their credit and common sense be it said, that in the framing of their new Australian Commonwealth, they have taken a lesson from the unhappy position of their Canadian brothers and have seen to it that in matters pertaining to medical education and registration the central government has the control.

Gentlemen, it is my belief that we must make a step forward and do something to erect a bridge over the provincial boundary lines. I use this phrase advisedly as it explains what I mean, as against breaking down the barriers. This latter is what cannot be done, but the bridge can be erected by consent, and this without doing violence to the rights of any within their own domain.

Eleven years ago, in the preface to a little book I compiled, I wrote the following :—

> **"The B. N. A. Act having consigned all matters affecting education to the various Provinces of Canada, as distinguished from the Federal Parliament, these separate Legislatures have from time to time passed certain Acts governing the Profession of Medicine and Surgery, and it has often occurred to me that it would be a useful and interesting work to bring these various measures together into one volume for the sake of convenience, as well as of comparison, anticipating perhaps, the time when legislation governing our pro-**

> fession shall emanate from the central authority and thus from a one portal system of entrance. In saying this I believe I am only voicing the sentiments of a large majority of the profession in Canada who consider the method now in vogue to be cumbersome, expensive and unnecessary.

The majority I there refer to is now a vast wave, I verily believe, of the general profession, who, although the way is not yet perfectly plain, are hoping with a fervent desire that the obstacles may soon be overcome, and that those who desire enlarged pastures may have an avenue opened to them, whose lines will be sacredly guarded and whose examination hedges will be high enough to secure it from being scaled by any but highly trained provincial athletes. It is not to be inaccessible, but its dignity is to be secured by legal enactment, whereby it is not suffered to be lower in its requirements that the highest at any time existing in any province.

Surely this is fair. None are compelled to enroll upon its register, but those who wish to ought to have a way provided by which they can obtain a Dominion license, and so secure recognition in Her Majesty's Empire.

Provincial registration will still remain and it will still be for each province to fix whatever standard it pleases for its own practitioners. It is this very difficulty of securing uniformity in the standards of so many provinces that has up to now effectually blocked all efforts at interprovincial registration. I, for one, am glad that such a scheme has failed in its accomplishment, because no matter how perfectly conceived and organized, it would never do for the men of this country what Dominion registration will most assuredly do.

It is not for me to enter into details, but I consider a great responsibility rests upon us now in this matter. We are guardians of the higher interests of that army of young men forever pouring into our ranks. We must see to it that we give them the highest advantages. We must rise above all selfish interests and not allow personal prejudice to stand in the way of so great an advance, whereby our men can have thrown open to them so great an Empire at such a minimum of cost, time, and personal inconvenience.

A question that is demanding increased notoriety and importance each year, is that connected with the care and management of cases of tuberculosis, and especially that form of the disease commonly called consumption.

Science has demonstrated that we must no longer continue to regard such cases simply as objects of our solicitude, sympathy and regret, but that each one in its own sphere is a direct menace to the health and continued life of those with whom it comes into direct relation in the

ordinary walks of life. It is well established that hereditary influences, once regarded as so potent and far reaching, are but a predisposing condition of weakened vitality; and, further, that the chief reason for the continual occurrence of phthisis pulmonalis among the members of the human race is to be traced to an infection from a preëxisting case.

The quiet spread of this wonderful news is having its good effects in a miniature way, and the daily warnings and precautions of enlightened men to their patients and the patient's friends are slowly but surely extending this gospel over the whole universe. I have been struck often with the information possessed on the subject by even the ignorant and poorer classes, who with but a superficial smattering of knowledge, eagerly seize upon the good news and endeavour to carry out, even in a perfunctory way, the instructions laid down for their guidance. It took a very long time, gentlemen, to inoculate the marvellous news of vaccination, often into an unwilling public, but if ever anything was proved, it has surely been put beyond cavil that a community properly protected by vaccination is practically fearless about smallpox. It has taken a longer time still to influence the ravages of syphilis, but the patient efforts of our profession throughout all civilized countries is having its just reward, and the poison has become gradually attenuated as each decade has come and gone until now-a-days, except under unusual circumstances, we rarely see the revolting, disgusting and manifest lesions once so common and easy of daily demonstration.

Just so it will be, in my belief, with the white plague now a menace to the human race. The efforts of science, the revelations of the microscope and the patient work of the bacteriologist and the clinician, have given us sufficient information whereon we can base a practical standard of conduct, and even now we can observe the result of our earnest and painstaking efforts to prevent the spread of this dire malady from patient to patient. It is not for me on this occasion to weary you with details that are instilled into us all more surely and with greater vigor than our catechisms ever were, but I would take this opportunity to say that none of us are too humble or unknown to take, each one for himself, a fair share of this grand work.

The time has come when those of us who are connected with public institutions must steadfastly set our faces against receiving consumptives into our wards. Such a change of demeanour towards the sick and suffering cannot be carried out too suddenly, lest we unnecessarily shock the refined but untutored sensibilities of a philanthropic public; but the more we fight against this practice and the more we spread the knowledge, the sooner will philanthropists come to recognize the crying

need of their open-handed aid to their afflicted brethren, fast coming into dire straits for a place whereon to lay their wearied frames.

Shunned by their neighbours, yes, by their intimate friends to say nothing of their relations, passed on from hand to hand, refused admission here and there, strength fast waning, slender means and opportunities for replenishing their financial resources rapidly fading from their horizon, their condition is indeed pitiable, but beyond it all the stern sanitarian is forced to keep in view the greater problem—the protection from disease of the greater number. Self interests are beginning to tell; the home of the merchant prince or millionaire capitalist is not regarded as sacred ground by the tubercle bacillus, who expends his unmerciful ravages wherever he is an invited guest, and once granted an asylum, he is not easily dethroned or turned adrift by the forces of culture, ease, refinement or wealth.

The cry is now being heard to arise in the land: "Keep us free from contamination by this awful scourge which brings sorrow and disaster to so many of our homes. Do not allow consumptives to mix with well people."

Prohibit them from public places. Shut the doors of our churches, our theatres, our railways, our public conveyances to them. Do not allow them to expectorate on the public streets, to say nothing of such a practice inside the four walls of a building—in other words, isolate them from all mankind. The answer is simple. It is impossible to work so radical a change immediately, but if those who are revelling in the enjoyment of sound health and in the possession of this world's goods will come to our aid, we will gradually but surely bring about a wonderful amelioration of the conditions above referred to. Help us to erect sanitoria in healthy situations accessible to the vast majority. Place these patients under suitable conditions by the expenditure of some of your overflow of means, and even a moderate lifetime will not be by any means too short to witness a revolution in the death rate and in the altered relationship that these afflicted patients now bear to their more highly favoured brethren.

In a small way such institutions are beginning to raise their heads in this country. I believe their number will rapidly increase and not be really felt as a burden on the public.

The Ontario Legislature has passed a bill at its last session providing a way by which one or more municipalities may establish a sanitorium for the care and treatment of consumptives. The province offers to bear a reasonable share of the cost and, when in working order, will pay out of the public funds $1.50 per head per week to assist in maintenance; and the Act also provides that a further like sum may become a

charge on the revenues of such municipality. This is a great step forward and shows at once the inevitable trend of public opinion on this subject.

One more question of importance to us generally as a profession and I am done. We continually have our attention drawn to the case of a brother practitioner being forced to defend a suit for malpractice or else submit to blackmail. I am sorry to say that, unfortunately, the conditions in certain individual cases are such that the latter alternative has to be accepted and rather than be ruined, or perhaps have a reputation blemished, a settlement is made out of court. Not so, gentlemen, in other cases. A man's honour is something very dear to him and cannot be rudely assailed. A firm consciousness of rectitude in his action over-rides all appeals to a so-called common sense, and so he calmly submits to an action, and is content to allow himself to be tried. Unhappily his jury is composed always of men who in the nature of things cannot appreciate the refinements and technicalities of medicine or surgery, nor are they trained in knowing the vagaries of the human frame when exposed to disease or accident. The plaintiff often induced by low or sordid motives, or animated by jealousy or spite, perhaps goaded forwards by a hidden enemy of the doctor, takes his course with nothing to lose and everything to gain.

The defendant knowing full well the disastrous results of defeat in the withdrawal from him of public confidence, which is his only stay, uses every means to win. He is forced to employ the best available legal talent to fight for him, and eminent counsel with handsome retainers become necessary. Legal technicalities arise, and he is taken from court to court while the bar and bench wrangle over abstruse questions of law and the original suit is a mere circumstance.

The case finally is disposed of, and may be won or lost; but who do you suppose has supplied the sinews of war? Why, the doctor of course, and it oftentimes happens that he is absolutely impoverished, and has spent the savings or earnings of years in fighting for a principle and to uphold the honour and dignity of himself as a man, and of the profession to which he belongs.

Gentlemen, this ought not to be so, we ought and we must in some way stand shoulder to shoulder. It must be understood and published broadcast that our profession is too sacred a thing to allow it to be trampled upon with impunity. Actions for malpractice will surely continue, and if deserved cannot be defended, but unrighteous and unholy suits of this kind must be fought unhesitatingly and unsparingly, and when the public know that they cannot frighten a doctor into paying up hush money, but rather that he will be backed up and supported by

his brethren and their action bring down on their own heads publicity and shame and redound in the long run to the credit of him whom they are trying to disgrace, such actions will be few and far between.

This is not the place nor the occasion to formulate in detail a scheme for a defence association. Whether it is to be purely local, or larger and more provincial, or whether it should emanate from this Association and be Dominion, are questions well worthy of your consideration and debate. An enlarged scheme, such as I have just hinted at, could be undertaken without any very great difficulty and an executive chosen for each province who would carefully investigate the merits of all cases submitted, and if defensible, bring into operation the forces at their disposal through the various provincial channels.

This is but a rude outline of much that could be said and urged on this question, but I have no desire to weary you with a prolonged argument, nor to attempt to thrash out the details of organization whether provincial or Dominion, but I want at this meeting to arouse in you a sense of its far-reaching importance, so that if it cannot be inaugurated now, some of you may feel disposed, on thinking it over, to initiate a movement in the premises.

Gentlemen, I thank you for your reception of me as your President and for your patient hearing, and I hope I may be allowed to take my seat and enjoy myself for the rest of the session.

THE ADDRESS IN GYNÆCOLOGY.

BY

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Delivered before the Canadian Medical Association, Ottawa Meeting, 1900.

MISTAKES IN DIAGNOSIS AND TREATMENT.

From the standpoint of a consultant of over twenty years standing, I have learned something of the mistakes in diagnosis and treatment made by myself and others. I have conceived the idea that some consideration of this subject might not be unprofitable before a meeting mainly of general practitioners.

It is a trite saying, that we learn more from our failures than our successes. It is, perhaps, equally true that we learn more from our mistaken than correct diagnosis. The lessons we thus learn are often painful and the experience bitter, but they are not likely to be forgotten.

Accuracy in the diagnosis of pelvic conditions depends mainly on education of the sense of touch. This can only be obtained by long and patient practice and much opportunity for making examinations. All teachers of practical gynæcology will bear me out when I speak of the difficulty in giving to the medical student more than a few opportunities on the patient. It is far other with the teacher of clinical medicine, who can in most cases allow an unlimited number of students to examine a chest or lung case.

Nevertheless, many fewer mistakes would be made if attention were given to a few simple details. In this, as in everything else in medicine, the grand safeguards against mistakes are system and method in case-taking and examination. As a rule a woman's pelvic organs cannot be satisfactorily examined if she lie on a bed or couch. The many advantages of a table, a firm surface, for the physician's comfort, have only to be experienced to be realized. I am well aware of the difficulty in getting many women to consent to this, especially if the practitioner be young. Suitable personality and tactful manners will, in most cases, lead to success.

The condition of the adjacent viscera, the bladder and rectum, is all important. The rectum must have been emptied before the patient comes to the examining table. With reference to the bladder, my own practice, learnt by personal experience, is to empty the bladder by

catheter after the patient is in position on the table. The advantages are that: (1) We may note the presence or absence of discharges, such as that of gonorrhœa, about the genitals, and their character, a very important kind of evidence which we should lose if we allowed the patient to pass water naturally.

(2) There are many women who when asked to pass water immediately before a pelvic examination are unable from nervousness to do so.

(3) We get an uncontaminated specimen of urine for examination.

When from a suitable position of the patient, whereby the abdominal muscles are thoroughly relaxed, we may still have to contend with rigidity from nervousness or ticklishness on the part of the patient, this may be overcome by a manœuvre which I frequently practice with success. It consists in making a series of circular, frictional movements over the lower abdomen. These should first be in a circle of relatively wide diameter, the whole abdomen, but gradually narrowed to one much smaller. What do we gain by this manœuvre? If gently executed we overcome rigidity of the abdominal muscles and we displace gradually the intestines. These movements are the first thing done in the practice of the Thüre-Brandt method of pelvic massage.

Medical students and doctors of little experience have often complained to me of being unable to reach the structures at the upper and back part of the pelvis because their fingers were too short. The relatively long, posterior vaginal wall can be, in a sense, shortened by steady, gentle, continuous pressure on the perineum, whereby it is partially turned into the vagina.

In physical examination for pelvic diagnosis I would strongly urge caution in the use of the sound. Apart from the danger of inducing abortion in unsuspected pregnancy, unless strict asepsis be practised, the sound is a dangerous instrument. Many a woman has died of the uterine sound. In the great majority of cases it cannot be used without abrasion of some part of the uterine canal. Unless instrument, hands, and field of operation be sterile, there is great danger of infection, and this has often been the consequence, setting up more or less serious and sometimes fatal pelvic inflammation.

With all due respect to the great Sir James Simpson and others whose names are so intimately connected with the use of the sound, I am convinced that it is a much overrated instrument. In hands skilled in bimanual palpation it is rarely necessary, while in hands unskilled, it will hardly ever add to useful, practical understanding of the case. As a consultant I have learnt that the sound is a great deal too much used by the general practitioner.

Mistakes in the diagnosis of retroversion of the uterus, either way,

that is to say, mistaking retroversion for other conditions or mistaking other conditions for retroversion, are certainly amongst the commonest. But, indeed, accurate diagnosis in complicated conditions, (and complicated conditions are common and the most important) is often most difficult. A common mistake is overestimating the importance of retroversion, of the displacement *per se,* in a complicated case, as of pelvic inflammation directly inducing the displacement. Such an imperfect or mistaken diagnosis may lead to an attempt to replace the uterus by sound or repositor, and to its mechanical treatment by pessary, with, most probably, disastrous results.

This leads me to speak of mistakes in overestimating the importance of deviations of the uterine axis from the normal. No more fierce wordy wars have ever been fought than by gynæcologists over the relative importance and order of occurrence of displacements, and those changes in the circulation and nutrition of the uterus to which we apply the term chronic metritis. The transactions of the Obstetrical Society of London of about thirty years ago teem with the discussions. While most of us claim to have obtained a position nearer the truth, the consultant still finds in the body of the profession imperfect views, and inadequate conceptions of the subject. It seems often to be forgotten that the uterus in health is essentially a very movable organ. It is pushed backwards by a distended bladder, forward and upwards by a distended rectum, and by every act of respiration, especially by forced respiration as in coughing, vomiting, or violent effort, it is deviated from what may be considered the norm, and all such displacements, temporary it is true, are attended with relatively little in the way of symptoms attributable to the uterus.

I am next led to speak of another mistake which we have made in the past, but which we are, some of us at least, now rectifying, and that is in failing to recognize that in many women a displaced uterus is only one element, though certainly a very important one in a case of more or less general descent or sagging of abdominal viscera, the condition of enteroptosis. For many years I have in every case I examine made a point of examining for the position of the kidneys as well as other viscera of the abdomen. Displacements of these organs in gynæcological cases are of extreme frequency. It is true that descent of the kidney does not always cause symptoms. In other cases the symptoms are grievous. In the parous woman they are especially so. The commonest and perhaps the most important mistake here is in overestimating the importance of the pelvic condition and neglecting to take into account the rest. The repair of a lacerated perineum, the necessary colporraphies, and the performance of a selection from the various forms of

fixation of the uterus, may for these reasons be disappointing in their results.

In the management of displacements by many practitioners mistakes are often made in overestimating the usefulness of pessaries, in the selection of cases suitable for their employment, in the selection of a pessary for a particular case, and in the neglect of the very frequently necessary preliminary treatment of the patient and the parts against which the pessary will lie. Ofttimes too, there is lacking an adequate conception of the necessary care of a patient who is wearing such an appliance. The consequence is that appliances, which in suitable selected cases are undoubtedly most useful, suffer undue and unmerited discredit.

The sensations of the patient which suggest to her mind displacement of the uterus and which are apt to be accepted by the inexperienced physician, are often due solely to vaginitis. This condition, when of the fundus of the canal where it is often mainly or exclusively present, can only with ease or certainty be diagnosed and treated by the Sim's method of examination. This method of examination, it would appear, is learnt by only a small proportion of those who practice gynæcology. It requires the patient to lie on a table in the necessary position, to have her clothing loose, and to breathe quietly and naturally. All these conditions being fulfilled, the use of the Sim's speculum is merely an accessory, for the bent handle of a pewter spoon or even the finger will sometimes suffice to retract the perineum and posterior vaginal wall and expose the now distended vagina, the result of atmospheric pressure acting under altered relations of abdominal and pelvic organs. A careful examination by this method (which, I contend, should be practiced in every case with pelvic symptoms) will often lead to the discovery of a degree of vaginitis, which can be most satisfactorily relieved by a few applications of silver nitrate solution.

Perhaps no more common mistakes are made than in the diagnosis of pregnancy, and all will bear me out when I attempt to emphasize their importance. Of the effect of such mistakes on the reputation of the practitioner, I feel sure that some at least here present are prepared to bear me out. Failure in the recognition of existing pregnancy is rarely pardoned by a woman. Failure to discover that she is performing the supreme function of her sex, and to give her credit for it, is to her a grievous fault. Apart from this there is the obvious importance of early knowledge of the fact in order that plans may be made and necessary arrangements put in train. The cases are few in which a diagnosis cannot be made by a careful investigation of history, symptoms and physical signs, negative and positive. I must, however, not forget to admit that we are not always freely admitted to possession of each of

these sources of evidence. Many women are proverbially inaccurate as to dates and in the description of symptoms, and we must ever be on our guard against the designing woman, legitimately or illegitimately pregnant, who wishes to rid herself of the conception, and who hopes that by the use of the sound or other instrument incautiously used by the practitioner, her purpose may be effected. While history, symptoms, and the condition of the breasts are all important, the supreme value in the estimation of the various sources of evidence is to be placed on the bimanual palpation of the uterus. I am in the habit of impressing this on my students. If, with empty bladder and rectum, and everything else favourable in the position of the patient, you cannot easily define the uterine body, so distinctly firm in the nulliparous condition, then suspect pregnancy. It is thus soft in the condition of pregnancy, and comes nearly to the feel of the roof of the vagina and other structures in the pelvis. If the uterus can be defined, the value of the so-called Hegar's sign,—the sudden increase of size above the junction of the body and the cervix—is very great. It is in early pregnancy that mistakes in diagnosis are most frequently made, but I have known not a few in the more advanced stages. Cases are not unknown of all the arrangements having been made for operation for ovariotomy, and the patient meanwhile being delivered of a full term child. This has occurred to men of world-wide reputation, the authors of books and numerous papers on obstetrical and gynæcological subjects. In one instance which occurred to me, ovarian cyst had been diagnosed, and the woman being in great distress from the enormous distension, she had been twice tapped. She travelled over five hundred miles to reach me for operation, all the preliminaries having been arranged. I found her resting on her hands and knees in my waiting room and in that position she had remained during the night in the sleeping car. On examination, I was immediately able, through the cervix, to recognize fœtal parts. The case proved to be one of twin pregnancy with hydramnios. The gravid uterus had been tapped and the liquor amnii drawn off. Beyond a doubt the true nature of this case would have been recognized by a careful consideration of history, symptoms, and physical signs, instead of by the mental attitude of taking certain things for granted. Recorded instances are by no means single of operators, when doing hysterectomy for fibroid, being surprised by the discovery of early pregnancy. It is safe to say, from what we know of the very human nature of our profession, that many more have never been recorded. It is doubtless true that operation was the best course in many such cases. The sudden increased activity of growth of fibroids previously unsuspected, in the gravid condition of the uterus, certainly in many such

instances, must have led to the experiences just alluded to. I venture to make the assertion that they are very rarely unavoidable.

So much for the diagnosis of uterine pregnancy, undoubtedly often beset with difficulties. The cases are rare in which there is a necessity for immediate action. In all cases of doubt or difficulty the doubts should be frankly stated and time and further opportunities for examination requested. The cases are few in which the practitioner will not by such a course retain the confidence of the patient and her friends, whereas a positively given, mistaken opinion will in most cases be disastrous to his reputation.

If the diagnosis of uterine pregnancy be difficult in certain cases it is vastly more so in the case of extra-uterine pregnancy, whether early or advanced. I venture the assertion that there is no operator of large experience in pelvic surgery who has not at some time or other operated for tubal pregnancy and found something else; or has operated expecting something else and found ectopic gestation. I have to confess having made such mistakes more than once. There are many deviations from what may be called the symptom-complex of this grave condition. In the early stage of extra-uterine pregnancy the conditions most apt to be confounded with it are the various inflammatory conditions of the uterine appendages, cystic adherent ovaries, hydrosalpinx, etc. In the rarer instances of rupture of the gravid tube with speedy fatal hæmorrhage (and the danger of this is much greater when the gestation is in the relatively indistensible and more vascular part of the tube near to the uterine end), the symptoms have in several instances given rise to the suspicion of death from poisoning or by violence. This suspicion was very strongly entertained by the friends of a patient whose case was reported many years ago to the Montreal Medico-Chirurgical Society. This woman, who sometime previously had been a patient of mine for office local treatment, ceased to attend, and the next thing I heard of her was that she had died seven hours after having been seized with violent abdominal pain and other symptoms. The nearest doctor had been called and, failing to recognize the real nature of the case, he had administered morphine. The death of the patient was attributed by the friends of the patient to the drug. An autopsy was demanded by the doctor and at first refused, but when threatened with a coroner's inquest they finally consented. The belly was found full of liquid and clotted blood which had come from the rupture of an expansion of the tube no larger than a small almond, situated one inch from the horn of the uterus. Even in this case a careful enquiry into the history and symptoms preceding the attack might have suggested the true nature of the case, for the woman had had pelvic symp-

toms which had been relieved by treatment, after which she had become pregnant. As Gaillard Thomas pointed out in a paper written by him many years ago, in the majority of the cases of extra-uterine pregnancy reported, the patient is pregnant for the first time or for the first time after years of sterility, during which she has suffered from pelvic symptoms and from which she has partially or completely recovered, spontaneously or while under treatment. My own experience amply bears out these observations of Thomas and others.

The correct diagnosis of uterine fibroids, while usually easy, is sometimes most difficult, and the history of the subject is fraught with mistakes. I have more than once opened the abdomen for operation to remove a uterine fibroid to find that I had to deal with the much simpler condition of intraligamentous cyst. So tensely filled are these cysts sometimes, and in their process of growth so closely do they lie to the uterus, that by position and consistence they now and then closely simulate the common, solid tumour of the uterus. The diagnosis of uterine fibromyoma from intrapelvic cancer, usually ovarian, in its early stages is by no means always easy. One mistake of this kind occurring a good many years ago mortified me very much. The physical signs were such that my diagnosis was multiple fibroids. In a few weeks, failure of flesh and strength and the appearance of peritoneal fluid aroused suspicions of malignant disease, which were confirmed by exploratory operation.

All ovariotomists and abdominal surgeons of much experience have been disappointed and saddened by the appearance of intrapelvic and abdominal cancer within a year or two after a smooth recovery from the operation for removal of an ovarian tumour, apparently quite innocent in its characters. Lawson Tait used to remark something to the effect that every ovarian tumour had in it the elements of malignancy. His remark was doubtless the outcome of the experience I have alluded to. It would be more correct to say that if the whole of every ovarian tumour were submitted to careful microscopic examination by a competent pathologist, many which appear benign would show malignant characters. This fact is a strong argument, if any were needed at the present day, for the prompt removal of every ovarian tumour as soon as possible after its discovery. In malignant tumour of no other organ is radical cure by operation so hopeful.

Nothing in the experience of the gynæcologist is so saddening as that of cancer of the uterus. In the vast majority of the cases when first seen the only verdict to be rendered to the anxious patient is "too late" to do anything but make the last months of life as little miserable as possible. In by far the larger number the woman does not seek advice

from her ordinary medical attendant, until her case is hopeless for radical cure. In rare instances even when opportunity for examination has been given, the true nature of the case is not suspected. In my experience the worst case of this kind was that of a woman who was sent to me by her medical attendant in the hope that I might be able to cure a vesico-vaginal fistula, the result of cancer of the cervix that had extended to and perforated the vesico-vaginal septum. This neglect of uterine cancer is due more than anything else to the delusions so universal in the popular mind concerning so-called change of life, delusions which I regret to say are shared by a small though I am pleased to say diminishing section of the general profession. Such are the prevalent ideas, that at the age of from forty to fifty women are subject to profuse and irregular discharges of blood, and that the essential symptoms of cancer are pelvic pain and fœtid leucorrhœa. The experienced gynæcologist knows that, save in a few exceptions, menopause is not attended with menorrhagia or metrorrhagia, except when some form of organic disease exists, and that such symptoms demand prompt pelvic examination. If this be true of women who have not yet attained menopause it is vastly more true of those who have ceased to have discharges of any kind for months or years, and yet I have known a number of instances of women of fifty and over, one of sixty-five, in which the appearance of a bloody discharge was welcomed, and announced with pride to her friends by the woman as a return of the distinctive characteristic of womanhood,—as a renewal of youth. One woman said to her friends, "I am getting young again." In my experience the appearance of bloody discharge in a woman who has ceased to menstruate means malignant disease and nothing else in ninety-five per cent. of the cases. In the other five per cent. the source of the blood is that interesting form of vaginitis which the late Professor Hildebrandt of Königsberg proposed to call "vaginitis adhesiva ulcerosa." As regards the significance of pain and fœtid discharge, I wish to say with all the authority I may command as a consultant, that while invariably present in the advanced stages, they are almost as invariably absent in the early and manageable stages, and yet it has many times been replied to me when I had announced my diagnosis, "why the woman has had no pain or ill-smelling discharge."

If there is one early symptom of cancer more suggestive, even significant I ought to say, of the early stage of cancer of the uterus, cervix or body, it is the appearance of a thin, serous, slightly turbid, sometimes pinkish at first, and for many weeks usually inodorous, discharge. This so-called 'meat-water' discharge at any age ought at once to arouse suspicion in the mind of the practitioner consulted and lead him to in-

sist on an examination with all the authority he can command. The reasons should be given if necessary, and if he is refused he should wash his hands promptly of all responsibility in the case.

Malignant disease of the body of the uterus is undoubtedly very rare as compared with similar disease of the cervix, but I have found that its frequency and the possibility of it are much underestimated by many practitioners. The symptoms in a given case have led to the suspicion of malignant disease, the patient has been examined, the cervix has been found smooth and healthy, and the uterine body normal in size and symmetrical. Then, too often, has it been concluded that there is no cause for alarm, and the fatal malady, which could only have been revealed by the dilator and curette, is allowed for a time to go on with its stealthy pace till other more prominent symptoms arise.

And now I come to another class of mistakes, very common, much less serious in their results it may be, but certainly of great importance from the point of view of their effects on the patient's prospects and the practitioner's reputation. I allude to an underestimate on the one hand and overestimate, more frequent perhaps, on the other hand of the influence of disease and derangement of woman's sexual system on her symptoms and health generally. While it is true that there is scarcely an organ or function of the body which may not be disturbed reflexly or sympathetically by diseases or disturbances of function, and in many instances even by the physiological performance of function of woman's sexual system, yet it is most necessary that in every individual case the symptoms should be studied in the light of heredity, early training, and any other influences which may have determined the type of nervous system. And for the rest, in studying a gynæcological case the same methods should be pursued as those by which every case of disease is or should be studied, every organ and function carefully interrogated. In this way only may be avoided such grievous mistakes as removing healthy ovaries for painful menstruation, when that disorder is merely a local expression of a morbidly sensitive nervous system, inherited, or, as it may be, in many cases, acquired.

I feel that I must not conclude my discussion of this subject without an allusion to a class of mistakes which concern and influence the sexual hygiene of woman. Such are the mistakes of omission of the family doctor who fails to urge the mothers or guardians of young girls to inform those under their charge of the important matters pertaining to sexual hygiene. No girl can know by intuition the significance and importance to her health of a normal performance of the function of menstruation. How many instances have we not known of fright from the appearance of the discharge, of the use of cold water to remove it as an

unclean thing, of its disregard or of its deliberate arrest so that the pursuit of pleasure might not be interfered with. Such is undoubtedly often the result of ignorance, though many times also from wilful disregard of warnings of the consequences. In my experience there are few mothers or guardians of young girls who instruct in the necessary way those under their charge in this most important matter. This often appears to be a mere question of neglect but I am certain it is also very often from a shame-faced aversion on the part of mothers to discuss such matters with their daughters, and so a most important source of influence and a bond of confidence between mother and daughter are never acquired. If the young girl has to learn of this matter from friends and companions of her own age, or from mature women other than her mother, she may also learn from them other things she had better not have known.

There would doubtless have been little difficulty in further pursuing this line of thought. Suffice it to say that I have indicated mistakes the most common in my experience, and the most serious in their results, and if it be thought by some who have heard me that something is due in self defense for the selection of such a subject as that I have chosen for this address, let it only be that it is in some measure a confession. I have included in the list mistakes of my own, humiliating enough they have been, as well as those of others.

THE ADDRESS IN MEDICINE.

BY

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The Address in Medicine before the Canadian Medical Association, September 13, 1900.

SPECIALISM IN MEDICINE.

When, under the influence of faulty metabolism or other cause pessimism gets the better of us, we sometimes quote with approval the remark of Solomon the Wise, that there is nothing new under the sun, without reflecting that Solomon himself was probably not feeling his best at the moment. Something in his internal or large domestic economy had gone wrong, I suspect. Possibly he had to write an address! However this may be, let us suppose him suddenly brought for a visit to one of our large cities. He would certainly find that advance in knowledge has brought about great change in our relation to things, be the things themselves never so ancient or immutable. Solomon was at the *fin* of his *siècle*, but the old sun looks down on a different world at the *fin* of this *siècle*. He could not fail to be impressed by the subdivision of labour of the present day in every branch of industry. Were the great king to be seized with sudden abdominal pain he would surely have the benefit of a surgical and a medical opinion. Another doctor would make a blood count, another a urinary examination, another, perhaps, would examine his vomitus or stools; another, use the X-rays. If his abdomen were opened the pathologist would report on cultures from the cavity, or on the structure and nature of any suspicious tissue. It would, in a word, be demonstrated to him that specialization has taken place in the science and art of medicine, as in other sciences and arts. And Specialism in Medicine is the theme which I have selected for brief and, I fear, inadequate consideration during the time your President has done me the great honour of delivering you into my hands.

A line of cleavage appeared first perhaps between medicine and surgery, and it is curious to note that nowhere has the line, at least in name, in the past been so closely drawn as in England, where more minute specialization has met with considerable opposition. Toward this result the anomalous fact that the degree of Doctor of Medicine has in England been only a University title, must, it seems to me, have contributed. Practically everywhere else in the civilized world the practitioner is a

Doctor of Medicine. Although we have a fair working knowledge of the distinction between medicine and surgery, I, at least, find myself unable to frame a satisfactory definition of the distinction. Some thirty years ago, during my medical studies, I had the pleasure of meeting the late Mr. Holden, then of Bartholomew's Hospital, and was asked by him whether I meant to be a physician or a surgeon. On my reply that I looked forward to being a physician, he remarked, "Don't you do it; the surgeon can do all that the physician can, and more, too." When I repeated this remark to dear old Sir Henry, then Doctor Acland, he dryly remarked that he should be very grateful to Mr. Holden if he would come and teach him how to do some of his work. Much more recently I have heard of a very distinguished London surgeon defining a surgical case as one which paid him two guineas. Anæsthesia greatly enlarged the bounds of surgery, and yet twenty-five years ago there was not a pure surgeon in America. The surgeon did as much general practice as he could get, including midwifery. Surgical cleanliness has worked a great change in this respect, and the end is not yet in sight. We see men to-day, even in relatively small communities, confining themselves strictly to surgery. Without much exaggeration one can say that it is as hard to-day to live on medicine alone as it was twenty-five years ago to live on surgery alone. Belly-ache is now a surgical disease. I know of a child with pneumonic pain referred to the right iliac region being operated upon for appendicitis. A few years ago a woman was sent into the surgical wards of the Massachusetts General Hospital for operation, perhaps for extra-uterine pregnancy. The surgeon, who had had a large experience, noticed wrist-drop and a blue line on the gums, and transferred her without operation to my wards. So safe now-a-days is the use of the knife under proper precaution that there is temptation to use it for purely diagnostic purposes. Just when to yield to and when to resist this temptation requires good judgment and general knowledge. The heart is practically the only viscus which remains the exclusive province of the physician. That organ is more tolerant of insult than has been supposed, and who shall dare to say that, impossible as it now seems to us, a contracted mitral valve cannot be slit without causing death? The real line between medicine and surgery is one thing: the practical line is another. The last quarter century has seen them approximate notably, but they will not coincide until knowledge is perfect. The establishment of a German journal devoted to the borderlands of Medicine and Surgery is interesting.

Obstetrics, again, early became a specialty, though in rather a different way. For parturition is a physiological process, and in many countries a large porportion of births are under the sole charge of midwives. In

this country the general practitioner has clung to his obstetrics as a necessity for family practice, oftentimes bewailing his hard fate and interrupted nights, meanwhile. Of late years we see in the larger centres a tendency of obstetrics, at least among the rich, to go into the hands of a few men, who, on the completion of the puerperium, withdraw, the family physician resuming his place. This is a practice which, for obvious reasons, can obtain only in large communities. With entire appropriateness we see these obstetricians also busied in diseases peculiar to women, many of which are the outgrowth of one or more previous pregnancies.

Gynæcology is of almost unique interest from the point of view of Specialization in Medicine, and a medical Gibbon could write a vastly interesting book upon its Rise and Fall. Not many years ago it was, I am tempted to say, the most in evidence of any specialty into which enterprising young men were ambitious of crowding themselves before the ink on their diplomas was scarce dry. The mills of the gods grind no less fine than they did, but, I think they grind quicker in these electric days. Pure gynæcology to-day scarcely exists. Many deviations from the normal in the female pelvis give rise to no symptoms until the general health begins to fail, from one cause or another. Such cases belong to and are best treated, ordinarily, by the wise general practitioner. If I read the signs of the times aright, what may be called pelvic tinkering, which has been so much practiced in the last decades, is suffering from a rapid decline. What is really necessary can safely and best be left in the hands of the obstetrician alone, or aided by the general physician: and major gynæcology, the great bulk of which involves laparotomy, seems to be going where it belongs—into the hands of the general surgeon. It may all have been a necessary sequence in the evolution of knowledge, or I may be ignorant or prejudiced, but I cannot look at the groping course of gynæcology as a triumph of human intelligence.

How many women have been unnecessarily deprived of necessary sexual organs ? how many have had their attention fixed on these organs which in the male nature has left in evidence, but in the female has modestly hidden away, affording, like all hidden or veiled things, wide play to an awakened imagination. On the eve of reading these words I see the following, just from the pen of Prof. Howard A. Kelly* of the Johns Hopkins, certainly a competent witness: " . . . the general adoption of the principles of asepsis leaves the barrier between general surgery and gynæcology a purely artificial one, and one which must inevitably, sooner or later, be broken down. My advice, therefore,

* Philadelphia Medical Journal, Sept. 1, 1900, p. 391.

to all gynæcologists is to study general surgery and become general surgeons first."

Surgery and obsterics seem likely always to hold their places as great divisions of medicine as a whole. Let me now turn to the subdivisions of medicine, as contrasted with surgery and obstetrics, and try to consider specialization in connection with its etiology. The first place among the causes for the increase in specialism doubtless belongs to increase in knowledge. A half-century ago James Jackson, than whom my native city has produced no wiser physician, said that there was more actually known in medicine than the mind of any one man could grasp. If this was true of fifty years ago, how much more true it is of the present day! The field is so large that no one man can possibly oversee and bring it to full productiveness. Each crop needs a separate head of the first class. But here perhaps as well as elsewhere, I may state that I trust nothing I say or shall say can be construed into any slight on the general practitioner, especially on the men who in small communities are liable to be called upon to deal with any emergency of any kind pertaining to medicine in its broadest sense.

All honour to those to whom all honour is due. Those of us who dwell in large cities and have the advantage of the presence of experts in every line at instant call are, I believe, keenly alive to the danger of one-sided development to which we are exposed, and to the lack of self-reliance and resource following from this, when we get off our narrower or wider beaten track. I simply mean that the highest excellence, knowledge and skill in all branches of medicine are simply impossible of attainment by any one man—a proposition which must command universal assent. The speciality of neurology seems to me a case in point. Great advances have been made in our knowledge of the anatomy and physiology of the nervous system in recent years, though there is still enough which is obscure. Neurology deals with a system rather than with an organ; has length and breadth; touches medicine at very many points; and thus involves less risk of narrowness of view to its devotees than do some specialties. A general practitioner once shrewdly remarked to me, "It takes a mighty big man to be a specialist." The neurologist must also have large knowledge of the diagnosis and therapeutic uses of electricity.

Diseases of the skin, with its appendages, accessible as they are directly to sight and touch, form one of the earliest of modern specialties. As coming under external pathology they were formerly considered rather the province of the surgeon than of the physician. The dermatologists have amply justified their existence, and have profited to the full by the impetus which bacteriology has given to all branches of medicine.

It is only in centres of population that the specialist can get a support. In the increase of these centres lies the second factor in the etiology of specialism. Not only are cities growing in number and size, but the means of rapid and ready travel are so multiplying that the hope of relief from mere inconveniences, perhaps, makes people everywhere intolerant of ills which, in earlier times, they resigned themselves to bear as best they could. I have often thought what a wonderful field London offers for the development of the highest and best specialism. Quite apart from her five million inhabitants, she is within relatively short reach of any part of the United Kingdom. Besides this, people bring back from the English colonies scattered over the world many kinds of strange ailments and all manner of climatic results. There one may lay his foundation broad and deep, can keep in touch with the larger aspects of medicine, and can be gradually converted into a specialist, even of an organ, if he wish. His consulting-room is a filter for thirty odd millions of people. He can legitimately be forced into a specialty,—quite a different thing from forcing himself into one. Other things being equal, the larger and wider his general experience has been, the better specialist and the bigger man will he be.

A third factor in the increase of specialism grows out of our first. Inventive talent is leading more and more to the possibility of direct examination of organs and cavities which were formerly closed to our eyes and touch. The proper use of many of these aids requires a long apprenticeship. The limits of physiological variation must be learned, and delicacy and skill must be acquired in the use of instruments more potent for harm than good in untrained hands. Manual dexterity, impossible to some, and attainable by any only with practice, is added to general knowledge and good judgment. Ophthalmology, demanding also a wide knowledge of optics, affords a good illustration. The otologist should know much of acoustics. The nose and throat are so intimately connected with the ear, and form the starting point of so many ear diseases, that it seems to me they should all be included in one specialty rather than in two, as is generally the case at present. The addition of the larynx would not seem to unduly enlarge the field.

I cannot see that there is now, at any rate, enough special knowledge and technical skill involved in the diagnosis and treatment of digestive disorders as to warrant their separation into a true speciality. Yet a National Association of Gastro-Enterologists has, I believe, been formed in the United States. Time is inexorable and will settle the real status of the matter, so I will refrain from prophecy, bearing in mind the adage, "Don't never prophecy unless you know."

So much training is required to attain the best results with the X-rays

that their use seems likely to fall largely into the hands of specialists, particularly where neither bones nor foreign bodies are in question. Y and Z rays may also be discovered, and broaden the speciality.

The three factors in the multiplication of specialties already mentioned—increase of knowledge, aggregation of population with rapid and frequent means of transit, and the invention of instruments requiring delicacy of use—may be regarded as inherent.

Besides these there are another three which I should class rather as accidental.

A man may, first, have a special aptitude or taste, leading him to limit his work. This may be dangerous to indulge, or, at least, to indulge too early. The director of a modern gymnasium searches out the weak points in a would-be athlete, and, by attention to them, encourages symmetrical development. Next is a desire on the part of some to escape the hurly-burly of general practice, its irregular hours, and what they deem its slavery. This desire may be based on delicate health, or indolence. The latter is no more likely to render good service to the community in a specialty than in general work. Thirdly, the hope of a greater emolument with less toil may be added. People will pay larger fees for what they consider special knowledge, and the number of persons who can afford indugences of all kinds is large and rapidly increasing. The ophthalmologist gets more for removing a speck of dust from the eye than does the general practitioner.

Specialism divides up the organs and systems of the body, separates the sexes in a measure, and still insatiate, steps in between children and parents. Shall we see parents and grand-parents similarly set apart? Why not a chair in Medical schools for the Disease of Old Age, as well as for the Diseases of Children? It is a conservative statement that the pathology of old age is at least as peculiar as is that of childhood. Infant feeding alone affords scant material for a specialty, particularly if the profession as a whole would insist more on the use of nature's provision for young mammals, apparently sufficient for all of this class, save man. The number of women who can nurse their children is much larger than is that of those who do.

There are no instruments of precision or diagnostic procedures used in the diseases of children which are not in common use in adults,—at least as far as I know. Of course, pathology is modified by age, but the difference seems to me minor. It is pleasanter to float on a flood than to struggle against an ebb tide. This may partly account for the apparent lack of enthusiasm for association exclusively with the diseases of the aged.

All the specialties which have been thus far mentioned are followed

by men coming into continual contact with sick people; by men in active practice, so-called. The day is passing in America, and has indeed passed in the larger centres, when teachers of anatomy, physiology, and pathology can be also practitioners of medicine. These fundamental branches have become specialties as fas as teaching and research go, and an increase in the number of their followers can confidently be expected. Bacteriology is, in a broad sense, merely a department of biology. But the methods of study involved in the minute size and other attributes of the forms of life with which bacteriology deals, and the vast amount we have still to learn with regard to these organisms, afford full occupation for a large band of special workers.

Biological chemistry, again, promises a large and productive field for a considerable number of special workers. Hygiene and Experimental Pharmacology also should be mentioned. The lines of cleavage between these more purely scientific specialties, just as between the practical specialties, are apparent rather than real,—a matter of convenience rather than principle. Increase of knowledge will bring rearrangement of some of these specialties at the same time that it may tend to increase their number.

We practitioners cannot be too grateful to the men who are willing to eat the bread of carefulness and devote their energies to the study and teaching of principles. We deal mainly with individual cases of disease. We try to cure or palliate the manifestations of disease in single cases as they come to us. Their aim is to make it possible, through determination of the causes of disease, to, in the first place, prevent them, and, in the second place, enable us to treat the disease itself when it does arise, rather than merely to treat the patient, as we still so often have to do.

Malaria and syphilis stand practically alone as diseases for which specifics have been stumbled on in the course of ages. Our recent gain in knowledge as to the causation and mode of transmition of malaria has not, as yet, at least, added materially to our control of its symptoms or origin. And we are still in dense ignorance as to the real cause of syphilis. But within a few years myxœdema, diphtheria, and, I think it is safe to add, hydrophobia, have been added to the list of diseases which we treat directly, and we seem to be on the eve of important further additions to this list.

Formerly, shrewdness, "horse sense," and knowledge of human nature were more important elements in successful practice than even medical knowledge. Hence our ignorance has compelled us to treat the patient rather than the disease. And herein lies a great strength of quackery. Suggestion may be a more potent therapeutic agent in the

hands of an unscrupulous and positive man, ignorant though he be, than in the hands of a highly trained and conscientious man, handicapped often by a painful realization of his ignorance. Just in proportion with the advance in exact knowledge are the main props of quackery weakened. And it is to special workers in special fields that we must look for this advance.

One is half tempted sometimes to think that the medicine of the future will be robbed of a charm which inheres in it to-day,—the charm, namely, which belongs to the element of uncertainty, and the stimulation which this should bring to thought. The impulse is strong to cut the Gordian knot of abdominal diagnosis, as has been already mentioned. Fine methods of research will gradually substitute certainty for uncertainty. But diagnosis is not likely ever to become a mere penny-in-the-slot affair, and the management of the patient—the art of medicine—will ever play an important though more and more subordinate rôle in the drama of medicine and human suffering.

Specialization is evident in hospital as well as in private practice. The ideal hospital is a place where the poor can have the benefit of the highest skill and attainment in every branch of medicine—a beneficient trust where specialists are associated and harmoniously working together. It must also be a centre of medical teaching and research, opportunities for which constitute the return from the inmates for the benefits received. It seems to me a question how far is it wise to encourage the establishment of special hospitals devoted exclusively to this or that age, sex, or class of disease. The isolation of the staff of a special hospital has its manifest disadvantages. The creation and support of the more minute special departments in a general hospital dependent for its maintenance on the public spirit of private persons, has its patent practical inconveniences and difficulties. The general hospital must follow, not lead, in specialization, and cannot afford the luxury of "fads" unless it is far richer than are the general hospitals of which I have knowledge. Although hospitals are not business enterprises, one of their sinews is money, another, the devotion and capacity of the medical staff. The same administration can, given the funds, run a general hospital formed of a congeries of special departments as well, and at less cost, than separate administrations can run a number of special hospitals.

It is all very well to say, "Take no thought for the morrow;" if our predecessors had acted literally on this precept we should be in a bad way. Progress will march and evolution go on in spite of us, doubtless. But we can have some influence over the rapidity of evolution, and it is our business to do what we can to foster right and to discourage wrong

tendencies. One fact stands out clearly,—that Specialism in Medicine has come to stay. Its advantages infinitely outweigh its disadvantages, and we have faith that all things work for good in the long run.

We study the past, and speculate as to the future. We all sometimes feel as did the late Dr. Hagen, the great entomologist,—"I should like to be my own great-grandson." We cannot greatly influence the amount of pity which our great-grandsons may feel for our attainments, but we can force their respect for our honest and unremitting effort.

PULMONARY TUBERCULOSIS: ITS TREATMENT AND PREVENTION.*

BY

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In bringing this subject before you, I do so with a good deal of diffidence, feeling that many will listen to this paper who are very much more able to do justice to the subject and interest you, than I. I must therefore ask your indulgence for much that will be said imperfectly, and for much that, from the largeness of the subject, must be left unsaid.

I lay claim to very little that is original, and have chosen the subject chiefly for two reasons: (1) That of all diseases, tuberculosis in some form is the most common, one-seventh of the total death rate of the world being due to pulmonary tuberculosis (Percy Kidd, in Clifford Allbutt's "System of Medicine," 1898, p. 156), our present subject, making it for that reason alone a subject of very general interest, almost every day bringing to our consulting rooms some victim of the disease. (2) My second reason was that in coming from a place where, owing to its reputation for dryness, large numbers of these cases are sent every year, I felt I might be able to give you some of our almost special experience, which might be of some small service.

Acute Pulmonary Phthisis.—Upon the acute or rapidly fatal forms of pulmonary tuberculosis I have little to say, because, while in some few cases they may take at some stage a more chronic form, in the vast majority of instances they are hopeless from the onset and go steadily downwards, in spite of all treatment, to a fatal termination. We can only alleviate and make the inevitable descent into the valley somewhat easier. This may seem to some a pessimistic view of acute pulmonary phthisis, but in the present absence of any specific or immunizing agent, I believe every authority, without exception, will bear me out.

With the *chronic forms of the disease* it is different. These are the cases where in many instances we can not only improve, but often arrest and cure, provided two things are given us:

(1) That we get them and recognize them early.

(2) That we are able to carry out the necessary treatment.

The most promising cases, the cases in which we can do most, are those in which the disease is incipient. *Early recognition is the great*

* Being the address opening a discussion on this subject at the first meeting of the British Columbia Medical Association, Vancouver, August 10th, 1900.

secret of a good result, and it is just here that we doctors sin against the patient and allow him to throw away his one chance of restoration to health. I could tell you of case after case coming into our dry climate with hopelessly advanced disease who, on questioning as to how long they have had trouble, inform us that for months they have had cough, fever, loss of weight, the melancholy symptoms that go to make up this disease, but only within a few days of their leaving were they able to extract a confession from their physician that their lungs were affected, when often it is too late.

I do not believe that these medical men do not know, but I do believe that they are not honest with their patients. I know that often these assurances are given out of the kindness of heart of the medical adviser who wishes to allay the nervous fears of the patient, but I bring these facts before you, gentlemen, because I believe it to be no real kindness. We are depriving the patient of the one opportunity of being saved from the peril of this death, and because I believe their great hope of salvation rests upon our recognizing the disease when it is incipient or even earlier, and not when it requires no medical man for its diagnosis.

Often these incipient cases come to us complaining of some symptom which is apt to point us away from the lungs, and we are betrayed into carelessness:—*e.g.*, anæmia or gastric disturbance. This latter I have found very common. There may be no cough, no expectoration, no fever, and only a careful examination reveals the true nature of the case. There may be an initial hæmorrhage with perhaps no physical signs. In other cases a very slight evening rise of temperature may long precede the development of marked physical signs. These are the cases in which much can be done, and the salvation of our patient depends upoin the early recognition and treatment.

Treatment.—In coming to the treatment of pulmonary tuberculosis, we find ourselves up to the present time absolutely without a specific. While much has been done, while immense advances have been made in recent years, chiefly owing to the labours of such men as Koch, we are still looking for a specific. Up to the present, every remedy claiming to be such has been tried and, I believe, found wanting, and therefore our aim must be *to increase the resistance of the tissues of our patients by every known means* in the hope that they may win the battle against disease and utlimately overcome the ravages of the bacillus, and in this way effect a cure. With this end clearly in view the treatment may be divided into (a) climatic ; (b) hygienic ; (c) medical.

Climatic.—I have put climate first, because in spite of the statement by some, that climate does not matter, I am firmly convinced that climate does matter, that the taking of the tuberculous patient and placing him

in the climate best suited to him, the climate which will have the greatest tonic action in increasing the resisting power of his tissues, is the first and most important step in all treatment. I believe, too, that altitude is important and highly beneficial, the rarer atmosphere increasing metabolism and calling for increased expansion of lung tissue,—although in hæmorrhagic cases it may be advisable to move them slowly to high levels. I might mention three cases remarkably benefited by the climate of my district in the absence of all other treatment.

(1) Case one was that of a naval officer who came to Kamloops with an initial hæmorrhage. He recovered, and, contrary to the advice of his physician, returned to his ship. A second hæmorrhage followed; he again returned to Kamloops and again recovered, and was well as long as he remained there. He again insisted on going back to the coast, when, sometime later, he had a recurrence and died before he could get up country.

(2) Case two was that of a young lady with marked disease of both lungs. She remained in Kamloops three years, and was, while she remained there, comparatively well. On returning to Vancouver during the rainy season she died within a month.

(3) Case three was that of a young man who was sent to Kamloops some years ago from Victoria with well-established pulmonary tuberculosis. He has completely recovered and is wise enough to remain there.

Without doubt these cases would have proved rapidly fatal had they remained where they were. Too often cases are only sent away when too far gone for anything to be of any use, and this has done more to discredit the value of climate than anything else.

Hygienic.—In coming to the hygienic treatment of pulmonary tuberculosis, I might say that in many cases everything has been left to climate. Before sending a patient to any particular health resort, I believe it is of vital importance to know that he will have a comfortable place to stay and regular and good food. He should live as far as possible in the open air, being placed, however, under the care of a reliable medical man, on whose advice he should rely in the matter of exercise, breathing, sponging and everything that comes under the term hygiene.

Medical.—Under the head of medical treatment I would mention, first, the inoculation and serum treatments, not because I myself have had any startling results, or because I believe they have accomplished much anywhere, but because I believe that it is along these lines that some day a cure will come. The results of the present tuberculin in some hands may have been more favourable. I noticed a statement made by Prof. Brieger at the late Congress of Tuberculosis, held in

Berlin in May of last year, "that Koch's tuberculin in its first and later forms was a specific." I have not found this to be so. I have used both Koch's later tuberculin and also the serum for which Maragliano claims results (obtained by immunizing horses). In no case in which I have used either of these serums, have I seen the slightest result. In one case, I believe Koch's tuberculin did harm. Some men, I know, claim cures for this treatment. I can only give you my experience.

In the administration of drugs, I believe it is of great importance to get the digestive tract into a condition to make use of whatever we give. It is not sufficient to give a bottle of cod liver oil and creosote to a patient, whether he can digest it or not. From its tonic and stimulant action I have found strychnine the most valuable drug.

Symptoms must, of course, be treated as they arise, and cannot be discussed here.

Prevention.—Finally, I come to the prevention of this awful scourge which is sapping the lives of our people, depriving the world of many of its brightest lights, and which has been well called "The white plague." We live in an age of preventive medicine, an age in which our efforts are directed not only towards the cure of disease, but towards *the creation of conditions under which disease shall be impossible or rare.* A high ideal! some may say. Perhaps, but not too high for the profession which we have the privilege of representing. How, then, can we create these conditions for the prevention of pulmonary tuberculosis? With the discovery of the tubercle bacillus and the knowledge of how the disease is propagated, the answer is quite clear. We must spread as widely as possible an elementary knowledge of the modes in which the disease is propagated, and the means by which its spread may be prevented. It seems to me, gentlemen, that, in the light of the present knowledge of the disease, its infectiousness, the modes by which it is spread,—facts which are known to-day to almost very reader of our daily papers,—it seems to me, I say, a criminal thing that we find these patients covering our sidewalks with their expectoration, coughing, as someone said a few days ago, "in the faces of our children," infecting our hotels and dwelling-houses, and entailing untold misery and suffering upon the innocent men, women and children with whom they come in contact. In Kamloops we are fighting this battle by issuing pamphlets and striving to educate the people up to a knowledge of the danger, but even this seems hardly enough. Only a few weeks ago I visited such a patient in one of our hotels and found the carpet of his bedroom spotted with his expectoration. If these people do not know better, who are responsible? Most of them consult a physician at some period of the disease, and if they go from commencement to finish with-

out a knowledge of the danger to others and their responsibility, are not we surely to blame ?

I could give you many melancholy histories of direct infection because of the almost criminal ignorance and disregard of the consequences of neglect. Let me give you one. A healthy, recently-married, couple with absolutely no tuberculous family history had a child of some two or three months old. About this time they took to live with them a girl, a friend of the family, suffering from pulmonary tuberculosis. This girl used to nurse the child a great deal, and, I suppose, kiss it. At times the child actually slept in her room. In a few months the child developed tuberculous glands in the neck. These were operated upon and removed, but after five of six weeks, in which the child did well, she suddenly developed tuberculous meningitis and died.

As a first means of prevention we must give to everyone, old enough to understand, an elementary knowledge of the disease. Teach the men and women, the children in our schools, wherein the danger lies and the methods of prevention, instead of taking up their time with so much that is to them useless under the name of anatomy, physiology and hygiene. As the tubercle bacillus hates fresh air and sunlight, we must make our homes sanitary. We must urge upon our governments, Provincial and Dominion, the necessity of Sanitaria, where those afflicted may be isolated and treated, and in this way prevented from going through our streets and houses spreading the infection broadcast. At present, absolutely nothing is being done in this direction except to send these cases up to some place like Kamloops, where the climate is known to be favourable and where there is absolutely no accommodation for them, where the hotels and boarding-houses do not want them and where everybody is afraid of them. It seems a somewhat extraordinary thing that in a province where such elaborate and, of course, proper precautions are taken to guard against smallpox, and where almost a state of panic would exist if a case should appear, that this awful white plague, which is killing at least a thousand to every one victim of smallpox, is allowed to spread almost undisturbed. Surely we are not alive to this question. Every country is awaking; are we alone to remain asleep in this province ? I would urge, with all the earnestness of which I am capable, the immediate establishment of a sanitarium at some suitable spot where those with, and those without, means may be treated. I would ask this association to point out in the strongest possible way to the Provincial Government now in session, their responsibility in this matter, and urge upon them that this province be no longer left without a serious effort being made upon their part to eradicate the scourge.

I would further urge that some competent man be employed to inspect at least once a year, or oftener if necessary, the cattle which are giving to our people their milk supply.

By this means, and every means we know of, we must wage war against this awful plague, struggling perhaps through years of prejudice, for extraordinary as it may seem, some will resent precautions interfering with their liberty. Those interested will even object to having the cattle inspected, and still more so when some are ordered to be destroyed. In the face of all this we must struggle on until the battle is won, and the conditions under which pulmonary tuberculosis flourishes no longer exist and the disease, by direct infection at least, is impossible or rare.

OUR RACE AND CONSUMPTION.*

BY

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The problem of all others staring us in the face is what course of action is most judicious to stay the spread of consumption. So alarming are the present results that conferences are being held on this subject in the most enlightened centres of the world.

History points out that no race of human kind has yet obtained a permanent foothold upon this continent. The Asiatics trace back their life history so far that it is like a geologic epoch. Those who descended from the Ptolemys are still found cultivating the rich alluvial banks of the Nile. The race that peopled Northern Europe when Greece and Rome were in their infancy, still retains its hold, and exercises a powerful influence throughout the world.

An important fact, and one worthy of consideration is, that races have been born on this continent, lived and entirely disappeared, leaving as records of their past history, mounds in the west, vestiges in Florida, and traces in other directions, which give an undoubted indication of at least two extinct races. Thus far the information is wanting which would clear up the causes why these races have entirely disappeared. It now remains to be seen if the Anglo-Saxon race will prove itself equal to the occasion and be more fortunate in establishing a more lasting foothold on this continent. Climate and civilization require a physique and brain-power equal to the occasion, to meet successfully the trying demands of the present age.

The enthusiasm of the Canadian people to assist in the protection of British interests in South Africa, was placed beyond doubt by the rapid equipment of fully 3000 men, who entered the field and displayed bravery not surpassed in the history of the Empire. True, as a result, many valuable lives have been lost, by the sword and disease; but as to numbers, it is most appalling to reflect upon the fact that over 3000 deaths were recorded in the fair Province of Ontario, in 1898, by consumption alone, and yet our people are not aroused as to this great fatality, now assuming such alarming proportions. It is undoubted

* Read before the Canadian Medical Association, Ottawa, September, 1900.

that the seeds of this disease lurk in our country, our homes, our places of business, the food we eat, the water and the milk we drink, and frequently the very air we breathe, spreading disease, fatal in its results, and producing a most disastrous influence on the present generation.

As a profession, what course should we adopt under present circumstances? It is our duty to guide and direct public opinion as far as possible, in order to place the whole subject in a clear and comprehensive form, so that common-sense co-operation may be aroused, and an active interest taken by all classes of the community; fathers, mothers, councillors and legislators, to stay, as far as possible, the alarming spread of consumption now termed the "White Plague."

For many years medical opinion was divided as to the communicability of the poison of tuberculosis, but we are all contagionists now since the remarkable discovery of Dr. Koch in 1882, that consumption of the lungs was one of the most frequent forms of tuberculosis, and solely caused by the introduction of a living germ, the Bacillus tuberculosis, into the system of a previously healthy person. To-day his theories are accepted and verified, that tuberculosis is a *communicable* and *preventable* disease, two facts which cannot be too strongly impressed on the public mind. The question of heredity is the one which for many years was the accepted opinion, exercising, as it did, a soothing influence as to the prospect of escape from consumption under such circumstances. Nothing is more certain or conclusive than that no one does, or can inherit consumption. The offspring of consumptive parents receive the infection from without before they can become consumptives, thus giving fresh hope and spirit to the parents known to be consumptive.

In 1888 and 1890, two British Royal Commissions were appointed to make investigations, in regard to tuberculosis, and the result of their deliberations was as follows :—

1st. That consumption is a contagious disease.

2nd. That contagion is in the form of a living germ.

3rd. The living germ can grow and propagate only in the body of man, or some of the lower animals.

4th. The principal source of infection, is the dried sputa, from the lungs of persons already suffering from the disease; the sputa becoming dry, the tubercle germs float as particles of dust in the air, and are thus inhaled.

5th. The other source of infection to man is from eating the flesh and drinking the milk of tuberculous cattle. Cooked meat destroys infection and is not as dangerous as raw milk containing tuberculous matter, and more particularly if the animal has well defined, ulcerated udders.

Dr. Clifford Allbutt has pubished (*British Med. Journal*, Oct. 28, 1899) the opinion, that there are instances of prolonged use of tuberculous milk by many persons, old and young, without ill consequences, and this immunity depends on the constancy of the defensive machinery of the body.

In 1896, a third British Commission was appointed, composed of eminent medical men and veterinary surgeons, to enquire into the means most advisable and desirable for controlling the danger to man, through the use, as food, of the meat and milk of tuberculous animals. The housing and general sanitation of cattle requires special care and attention. Tuberculin is advised free from government, to all owners of cattle, so that their herds could be examined at stated intervals, by the "tuberculin test." The animals infected should be treated according to the most advanced principles, either as to isolation or killing of the same. Local authorities are to take samples of milk offered for sale within their districts, and venders required to give information of the source from which the milk is supplied. These methods are now in force in England, to assist in stamping out bovine tuberculosis, and to protect the public in so far as infection is concerned.

The *Tuberculin Test* has been the subject of considerable controversy, and the following facts should be kept well in hand.—Dr. Watson, President of the State Board of Cattle Commissioners, Concord, N.H., in the Public Health Report, 1898, vol. 24, p. 149, states: "We believe that a majority of the cattle reacting to the tuberculin test are not diseased to an extent that requires their slaughter for the protection of public health." The policy of slaughtering all animals that reacted to tuberculin has been entirely abandoned, as after the most careful enquiry, it is believed that a majority of the cattle reacted on by the tuberculin test are not diseased to an extent that requires their slaughter for the protection of the public health. Much depends on the careful and thorough examination by skilled veterinary surgeons, as thus the danger of infection from either tuberculous meat or milk would be reduced to a minimum. Tuberculin does not reveal the degree of infection and is actually not as reliable a test as was at first supposed. Solomon, in 1893 (*Transac. American Pub. Health Ass.*), admitted that tuberculin was a great aid to the diagnosis of tuberculosis, but not infallible and might lead to errors. There are instances on record where tuberculosis existed and the animals did not react to tuberculin.

In all such investigations, in order to promote health in cattle as well as in man, the opinion arrived at by the highest authority is, that *sanitation* ranks first. Dairymen should be registered and an inspector appointed for a specified area of country, to be under the control of the Local Gov-

ernment or a Provincial Bureau of Cattle Commissioners, to make reports at stated intervals as well as issue printed circular directions to dairymen, milk vendors and cattle dealers, for their guidance and general direction, and all animals for food supply, should be inspected before sold. Some such system carried into effect in Canada would reduce tuberculosis to a minimum, and do much to strengthen the belief that our Dominion is a centre of health, happiness and prosperity. Too much stress cannot be placed on these facts, in order that the public, as a whole, may be aroused to the great importance of a general knowledge of the subject, as such would in time give direction to governmental and special efforts, to scientists, who should not be single handed, in public health efforts.

In May, 1900, the Regius Professors of Oxford and Cambridge, spoke with all the responsibility of their office, on the communicability of consumption, and its prevention, fully impressed with the fact that from 65,000 to 70,000 die annually in Great Britain from the disease, more than double the fatality of the entire British force at present in South Africa. Clifford Albutt epitomized the preventive measures: an active crusade against 3 D's, *damp*, *darkness* and *dirt*. In clearing the board of these evils, the standard of general health would be raised to a higher level, and what is needed in Canada is thorough organization.

At the last session, Ontario, a permissive bill was unanimously passed as a result of the labours of the "Anti-Consumptive League," Toronto, providing for the erection and maintenance of a sanitarium for consumptives in each Municipality, or group of municipalities, in the Province of Ontario. This is a most progressive move, in keeping with the advancement of the day, and one which reflects much credit on the local authorities of Ontario.

The history of medical opinion as to the communicability of tuberculosis is somewhat remarkable. Villemin was ridiculed as to his ideas of infection, but we are all contagionists now, and Villemin's name stands out as one of the greatest men of his time—a true scientist in the widest and most comprehensive sense.

Considering the antiquity of the contagious belief as to consumption, it is remarkable the length of time that elapsed before active measures were thought of to stay the progress of the disease. The contagiousness of consumption was known to Aristotle, who stated that the breath of consumptives was poisonous to those about them. In the second century Galen announced the very same idea, and warned the people that it was dangerous to live intimately with sufferers from consumption. In the 15th and 16th century, Baillon, a celebrated French physician, and Montano, observed the frequency of consumption in those who attended phthisical patients. In 1682, the celebrated Morgagni expressed the

same opinion. At Nancy in 1750, the furniture of a woman who died of consumption, was publicly burnt, by order of the Magistrates. In 1754, the Grand Duke of Tuscany sought counsel from the Florence College of Physicians, as to the infectiousness of consumption, and a legislative enactment for the prevention of consumption was issued in 1782, by Frederick IV. King of Naples.

Thus, in the medical history of Europe, we are enabled by records to trace very marked activity in the line of defense against the infectious character of consumption. Not, however, until the remarkable discovery of Koch were scientists at rest as to the origin and precise nature of this disease, which has an average of about one-seventh of all deaths, of whatever nature, and a fatality about three times as great as all other contagious diseases combined.

At present, fully 12 years since Koch's discovery, we find tuberculosis recorded in tabulated lists of disease as contagious, and certainly it is high time so progressive a move should be made. The remarkable fatality from tuberculosis leads to the belief that its latent power is more active than generally supposed. The one great source of contagion is the sputa of the consumptive patient, and particularly in its dried state. Fortunately, all those who inhale or ingest tubercle germs, do not contract consumption. Much depends on a "lowered state" of the system, rendering it "fit soil" for its development. The very surroundings of the individual limit greatly the infectious character of this disease.

Much as to the immunity from consumption depends on the care, prudence and watchfulness exercised, to promote a healthy state of the system, and to counteract any disposition towards a lowering of normal vitality, by careful observation and action, both as to external conditions, or surroundings, and the *internal workings of the system*, the very fortifications set up by nature, to guide, direct, and preserve health.

All interested in tuberculosis should be alive to the fact that it is a preventable disease, and as a most desirable precaution against its spread, those laboring under the disease should use a metal sputa cup, which, with contents, can be thoroughly boiled, and thus act against infection. Strict quarantine should be exercised against the importation of foreign consumptives. Connecticut Medical Society Report, 1899, states:—
"Every building, where large gatherings frequent, becomes a source
"of danger, unless precautions are used; for where can a large gathering
"be found, that some consumptive does not frequent? Theatres,
"churches, school-rooms, with vitiated air and packed doors, our homes
"where consumptives live, the mill, the office, the sleeping car, hotel and
"cottages, in all health resorts, where consumptives congregate, and even

"the public telephone and drinking cup, may become sources of "infection."

Shipowners should be careful that berths holding several passengers, should not have a consumptive. Once our people are aroused to the fact that thousands die annually, who might have been saved by preventable means, then timely care will be taken, and the necessary measures carried out, to reduce the death rate to the smallest margin possible.

As to the medical treatment, the opinion now prevails that we have no specific for consumption. Dr. Bodington, of Sutton Coldfield, England, was the first to advocate the open air treatment of consumption, and in this line of action, Dr. Henry Bennet, Edinburgh, advocated vigorously the open air treatment, Riviera. To the fresh air life, liberal feeding was added, and in this line, Hughes Bennet was quite noted, for the free administration of cod liver oil.

The Adirondack Cottage Sanitarium, for the treatment of incipient pulmonary tuberculosis, under Dr. Trudean, has accomplished much good and practical work. In round numbers, the result from all sanitoria, the only safe method of treatment, is estimated at about one-third cured, of those who remained a reasonable term, from 3 to 9 months; and what can be more satisfactory than the fact that absolute cures do occur ?

Sanitoria for consumptives are the order of the day, and we most earnestly trust that such action will be taken by the authorities in our Dominion, as will command the respect of the public and the profession. Marked increased activity is evident on this subject, indicated by the congresses held in various parts of the world. Last year, Berlin had a most successful meeting at which Canada was represented by Dr. Farrel, of Halifax, to whom we are indebted for an excellent report. This year, Naples has been up and doing, and next year (1901) the wisdom of the nation, and outside world, will assemble in London, under the presidency of H.R.H. The Prince of Wales.

If we inquire into the practical outcome so far, what have we to state, that many able speeches have been delivered, and much enthusiasm excited. Resolutions were passed, associations formed, and the state called upon, as to the requisite machinery, for carrying out the necessary sanitary measures. Lord Salisbury, at Marlborough House meeting, in 1898, said, "You must be content with preaching the salutary doctrine "you hold, and must not think of applying it with the secular arm." So now, in England, the protection of the people, in these matters of health, actually rests with the municipal and local authorities. In Italy, fortunately, matters are somewhat different. Professor Baccelli, who is also an authority, as statesman and scientist, and as President of

the Congress at Naples, announced that the Italian Government prepared a law concerning the prophylaxis of infectious diseases, in which tuberculosis figures conspicuously. Persuasion alone is not sufficient, but compulsion as well. We shall look forward with much interest to the outcome of this progressive measure, under the guidance of so eminent an authority.. The education of our people, as to the methods necessary to counteract the spread of tuberculosis, would assist materially all other efforts in the same direction. The school, the church, the councils, and in fact in every possible way, effort should be made to inform the masses, as to the vast moment of this serious malady, and as to the manner in which their united co-operation would prove of service.

Tuberculosis has become a really national disease, and is widely spread. The Provincial Bureau of Public Health, doubtless, will have an increased appropriation, and additional special experts on this disease, that every means should be taken to stay the progress of tuberculosis, without which our efforts would be futile, and the results anything but satisfactory.

A Central Bureau of Health cannot be thoroughly equipped without a chemical and bacteriological laboratory. Such are indispensable in the present advanced state of science.

The Dominion of Canada indicates a vigorous and healthy growth in this direction. Meetings like the present tend to strengthen and develop the power of public opinion in aid of the cause of science, and we trust that by judicious enterprise and intelligent energy the practical result will be, that the soil of tuberculosis will rapidly disappear, and cause Canada to be known as the Riviera of the North American Continent.

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ENTERIC FEVER IN CHILDREN.*

A COMPARATIVE STUDY OF ONE HUNDRED CASES.

BY

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Typhoid fever as met with in children under fifteen years of age, presents certain points of difference from the disease as met with in adult life. These distinguishing characteristics have already been referred to and described by several members of our Society.

During the past five years, several outbreaks of this disease have occurred in Montreal, due in two instances at least, to the infection being conveyed in milk. Quite a number of children suffered, but I am unable to draw a comparison between the numbers of children and of adults who were attacked, owing to defective registration of all the cases which occurred.

Extending through this period, I have the notes of twenty-nine cases of typhoid fever in children, the greater number of which occurred in my private practice; a few were in the practice of confrères, but were seen by me in consultation. I have also examined the records of forty-eight cases treated in the Montreal General Hospital during the same period, some of which occurred in my own wards, others I report by courtesy of my confrères; also the records of twenty-three cases admitted into the wards of the Royal Victoria Hospital, the notes of which were kindly placed at my disposal by the attending physicians; thus making a total of one hundred consecutive cases occurring in children under fifteen years of age. I have thought that a brief statement of the more important characteristics of the disease as manifested in these cases, and of the relative frequency of the various symptoms, with the results obtained by treatment might have some interest for the Society. Of these 100 children, four were under the age of two years, thirteen between two and five years, forty between five and ten years, and forty-three between ten and fifteen years.

In the four cases under the age of two years, one was received into the Montreal General Hospital under the charge of Dr. Finley; two occurred in private practice, and one was seen in consultation.

In the case of the one received into the Hospital, the diagnosis was

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* Read before the American Pediatric Society at its meeting in Washington, May 3, 1900.

at first doubtful. The history was that of an infant of thirteen months, apparently healthy, with the exception of a perforated tympanic membrane, the result of an attack of scarlet fever seven months previously. A discharge from this ear persisted. Five days previous to its entrance into the hospital, diarrhœa set in, the infant became listless, fretful, and drowsy; and food was refused. Two days afterwards, it was seen by a medical man and recommended for admission into the wards. Its condition on entrance was described as follows:—The infant was restless, turning from side to side in its cot and moaning; the face had a cyanotic hue; the abdomen was slightly distended; no rose spots were visible; the spleen was distinctly palpable; and the lower edge of the liver could also be felt; a few moist râles were heard at the base of both lungs; the pulse was rapid and very weak; the heart sounds were normal; loose fœcal movements occurred four or five times in the twenty-four hours. The infant died in the morning of the fifth day after its admission. The Widal reaction was absent. The post-mortem examination revealed typhoid lesions and the presence of typhoid bacilli in the intestines.

Two cases occurred during the spring of 1897 in my own practice. In both cases, other children in the family were at the time suffering from well-marked symptoms of typhoid fever. Infection in these cases had been conveyed through the milk. The attack in neither case ran a severe course. The temperature ranged between 102° and 104° for the first week. In the second week, between 100° and 102°, but subsided to normal before the close of the third week. In both cases the spleen was enlarged; rose spots were distinct in one, absent in the other. In both, loose movements of the bowels were present, but the diarrhœa was not sufficient to call for special medication. The only treatment employed was tepid baths at a temperature of 95° F., reduced to 90° F. In the fourth case, I was called in to see an infant of eighteen months, suffering from cerebral symptoms which the attending physician regarded as probably due to tubercular infection. At the consultation, a few rose-coloured spots were discovered on the slightly distended abdomen, the spleen was found to be enlarged, and three or four loose movements of the bowels had occurred each day since the onset of the sickness. A probable diagnosis of typhoid fever was made, which I afterwards was informed, had proved correct. After an illness of sixteen days, an uninterrupted convalescence set in.

Typhoid fever in the infant is generally regarded as a comparatively rare affection. Marfan, (*Traité des Maladies de l'Enfance, Grancher, Paris, 1897, vol. I., p. 332.*) states that it is remarkable for the vague character of the clinical picture, and its difficulty of diagnosis. The more exact methods recently placed at our disposal for the determina-

tion of the presence of the typhoid bacillus will remove this difficulty, and all cases of continued—perhaps it would be better to say, remittent—fever in the infant, unaccompanied by any distinct localization of the disease, should be carefully investigated. My personal belief is that instances of this infection will be found more numerous than the facts elicited in previous discussions on the subject in our Society would lead us to think.*

The statistics of typhoid fever in infancy are still too meagre to enable us to draw broad conclusions. Thus far, only the more severe cases have been recognized. With the more accurate means of diagnosis now at our disposal, the typhoid fever of infancy may yet be shown to run a mild and frequently unrecognized course.

After a careful investigation of the records of those cases occurring over two years of age, I do not feel inclined to draw a dividing line at any special age. While in children over fifteen years, the disease generally assumes the characteristics met with in the adult, in my experience up to the age of fifteen, it maintains the type met with in childhood;

* Since writing the above, Dr. W. P. Northrup has kindly favoured me with a copy of his report of a case of Typhoid Fever in an Infant Nine Months Old ; Recovery." (Presbyterian Hospital Reports, New York, Vol. IV., 1900). Dr. Northrup, in a very interesting paper read before the American Pediatric Society in 1892, and based on the post-mortem records of the New York Foundling Hospital for the previous ten years, stated that he was convinced that typhoid fever in infants under two years of age was very rare ; swollen mesenteric and Peyer's glands, and enlargement of the spleen in infants, in his opinion, could not safely be interpreted in the same way as similar lesions in adults. In a second paper, read before the same Society in 1895, he stated his position as follows : " Typhoid fever is a disease to which there is little susceptibility in children under two years of age. In epidemics, children under two years of age though naturally little susceptible, may, in the presence of an overwhelming poison (multiplied exposures), acquire typhoid fever." He quotes in support of his views the widespread epidemic in Stamford, Conn., in which only four cases occurred in infants under two years. " In adults," writes Northrup, " typhoid is named something else ; in infants, something else is named typhoid." The case described in his paper was the youngest undoubted instance in his experience ; the symptoms were well marked, and were confirmed by a positive reaction with the Widal test—a reaction, however, which did not appear until the temperature had returned to normal. The writer states that he has now seen six cases of undoubted typhoid fever in patients under two years of age, and concludes his paper as follows : " (1) The diagnosis in all these cases was easily made on signs and symptoms characteristic of typhoid in adults. (2) The cases were all intimately associated with others in the family. (3) Scepticism should be encouraged concerning any diagnosis of typhoid fever under two years of life, not intimately associated with other cases. (4) The most common mistakes arise from misnaming as typhoid the following diseases : grippe, subacute catarrhal enteritis, central pneumonia, and malaria."

A case very similar to the one reported by Dr. Northrup was reported at a meeting of the Montreal Medico-Chirurgical Society (MONTREAL MEDICAL JOURNAL, Vol. XIX., p. 609), by Dr. F. R. England. The age of the infant was only eight months. As stated in my paper, the question of frequency is one which can only be solved by the careful observation of doubtful cases.

the symptoms are milder and the duration in the majority of cases is under three weeks.

In thirteen of my cases, the *onset* was sudden. Children apparently in good health, were suddenly taken ill so that within a few hours symptoms of the disease were well-marked. In every case in which I have noted this fact, the sudden onset was associated with a disturbance of the gastro-intestinal tract attributed at the time to an indiscretion in diet.

Of the well-recognized *initial symptoms*, headache was observed as present in 68 cases (or 83 per cent. of the children over six years of age), and is noted as severe in 16. Vertigo is noted in 19 cases. Anorexia is noted in 49 cases. While no distinct chill is reported, in twelve cases the patients complained of a feeling of chilliness. In 18 cases, vomiting is said to have taken place, but did not recur after the first day. Movements of the bowels, looser and more frequent than normal, were noted in 36 cases. Of these, ten cases were distinctly diarrhœal in character. Six of these were children in whom the sudden onset was attributed to indiscretion in diet. In only four cases did the diarrhœa persist and require special medication. Constipation was present in a more or less pronounced degree in 59 cases, requiring rectal injections. Slight fullness of the abdominal parieties was noted at the onset in 48 cases. In 29, it is distinctly stated that no distension was present. Abdominal pain was noted as a complaint in 33 cases, while pain on pressure, a dubious symptom always in young children, is only stated to have been present in 15. Epistaxis occurred in 23 cases. Tonsilitis was present in six cases. A slight convulsion was stated by the mother to have occurred at the onset of tne attack in an infant of two years and eight months, but as this was one of the instances in which, apparently, the sudden onset was precipitated by injudicious feeding, its occurrence must be regarded as accidental, and not as an indication of typhoid infection. The personal equation enters so largely into any estimate of the value of these initial symptoms that it is impossible for us to draw any conclusions from them as to the prognosis of the attack.

On investigation of the symptoms occurring during the course of the disease, the temperature range was found to present some peculiarities worthy of notice. A resemblance to Wunderlich's ascent at the onset was noted in only 8 out of the 100 cases. This small number is doubtless due to the fact that the temperature in hospital cases, and indeed in private practice, is rarely accurately recorded before the fourth or fifth day of the disease. Three of these eight were cases in which the affection appears to have been contracted in the hospital, and as the temperature records were systematically registered in them, the step-like

ascent is distinctly noticeable; in one for three, and in two, for four days. After the first week, in the large majority of cases, the temperature became in a marked degree remittent. In those who were admitted into the wards towards the close of the first or during the second week of the attack, the temperature was remittent from the outset ; a fall of from two to four degrees being recorded in the morning, as compared with the record of the previous evening. During the third week, these extreme ranges (in 62 out of the 87 charts at my disposal), came to an end, either gradually subsiding or more or less abruptly ceasing; so that at the end of the 21st day, there was an evening temperature of not higher than 99 degrees. More frequently in the infant than in the adult do we find the temperature at the close of this period remaining persistently sub-normal for some days. In five cases it is noted that the rectal temperature remained between 96 and 98 for from three to four days. In one case, for four days in succession, it recorded 95.5° F. as a morning temperature.

Of the 87 temperature charts which I have been able to compare, in 19 the temperature on several occasions reached or exceeded 105 degrees, and the fever persisted for four weeks or more. In 37, the temperature on several occasions, reached 104 degrees, and the duration of the fever was about three weeks. In 15 cases, the duration of the fever was between two and three weeks, but the highest range of temperature was 103 degrees. In 16 cases, while the temperature may have occasionally reached a high point, the duration of fever was under two weeks. Of the remaining 13 cases, the temperature charts are either wanting or too defective to make use of them, but of these, four I have characterized as severe in my notes taken at the time, and nine as moderately severe. Taking the temperature curve therefore as some indication of the severity of the disease, I may refer to 23 of my 100 cases as being severe, 46 as moderately severe, and 31 as running a moderately mild course.

The pulse in the great number of cases was only moderately quickened, but in the few instances to which I will refer later on, it was rapid and dicrotic.

The spleen is noted as palpable in 70 cases, and in 8 additional instances, the area of splenic dulness is said to be distinctly increased in size. Tenderness on pressure in the left hypochondriac region is noted in 18 cases. Rose spots were noted in 55 cases. In three only are they said to have been numerous.* A diffuse erythema of the neck and chest

* Instances have been reported in which a very abundant eruption has occurred in infants as early as the fourth day. An interesting paper on typhoid fever in infants, characterized by a very abundant rash, has recently appeared in the *Journal de Médecine*, February 10, 1900, by MM. Weill and Lesieur. They state that an abundant eruption of lenticular rose spots indicates slight intestinal symptoms and a good prognosis.

is noted to have occurred during the first week in two cases.

In eight cases during the course of the illness, the abdomen is stated to have become distinctly distended. In five of these, diarrhœa was present. In two cases, rigidity and tenderness existed, which subsided on the application of an ice bag. In four cases, two of them under ten years of age, traces of blood were observed in the stools between the 18th and the 23rd day of the disease, but no severe hæmorrhage occurred.

In 19 cases, sonorous and sibilant râles are noted to have been present at the bases of both lungs. In one case, a child of seven years, is stated to have attended the out-patient department of the hospital for six days with symptoms indicative of an attack of broncho-pneumonia. The physical signs as observed were impairment of resonance at both bases with numerous sub-mucous râles; sibilant and sonorous râles over the upper portion of both lungs, and distant tubular breathing at the lower angle of the right scapula; temperature 103° F., pulse 112, respiration 44. After admission into the hospital, the spleen was found to be enlarged, and two days later an eruption of rose spots occurred on the abdomen. The temperature now assumed a remittent character, and the lungs cleared. Complete defervescence took place on the 16th day of the fever, followed by a relapse on the 23rd day of the attack, lasting eight days. The temperature then fell to normal and convalescence ensued.

At the onset of almost all the cases, and throughout the attack in cases of moderate severity running a regular course, the pulse remains slow even under the stimulation of a high temperature, indicating possibly some action on the penumo-gastric centre by the toxines of the typhoid bacillus; in sever cases, however, this action would appear to be more than counteracted by the effect on the muscular wall of the heart as indicated by the frequent development in children of a soft, systolic murmur heard sometimes in the mitral area, at other times both at base and apex. Its presence is noted during the second or third week in 22 of my cases.

A mild nocturnal delirium is noted as present in 18 cases. In only one instance was the delirium noisy. Restlessness in sleep or sleeplessness, occurring during the second or third week, is noted in 15 cases. In 12 cases, drowsiness is a marked feature of the first week; and in four cases, a condition of semi-stupor existed during the first few days after entrance into the hospital. In one case, with a dicrotic pulse, there was muttering delirium, picking at the bed clothes, and subsultus, with a temperature of 105.5° F. These symptoms, fortunately, passed off under free stimulation, continuous spongings, and the application of cold over the precordium. In a second case, in addition to the condition of stupor,

a course tremor of the fingers was noted, and abolished reflexes. When convalescence set in, a paretic condition of the muscles of the leg with dragging of the toes, was noted. I have no record of the occurrence of temporary aphasia, instances of which have been reported by other writers; but Dr. Finley reported to me one instance in which this condition had been present for two weeks, but passed off completely during convalescence. Of 21 cases of aphasia collected by Morse, only two had a central origin and were due to embolism. A paretic condition of the bladder, requiring the use of the catheter, was noted in three cases during the second and third week of the attack. On instance of tenderness of the toes was recorded.

In only five instances is it stated that a trace of albumen was present in the urine, in two of which a few epithelial casts were also found.

Otitis occurred in four cases.

A benign non-suppurative periostitis was noted in one case.

A tendency to subsequent furunculosis was noted in two instances.

Relapses have been noted in 15 of the cases. In one case, there were two distinct exacerbations. Relapses followed after both severe and mild attacks. It is stated (Marfan, *loc. cit.*) that they may be foretold by a persistence of the enlargement of the spleen, by the temperature failing to assume a normal and regular course, by the failure of the tongue to clean, and by the facial expression. I have failed to verify any of these statements, beyond noting that in five of the cases, the exacerbation occurred in the fourth week after a severe attack before the temperature had quite assumed a normal range.

In corroboration of the value of the Widal reaction in diagnosis, I would state that in 43 of my cases it was carefully sought for, with the following results :—

3	gave	it	on the	4th	day.	1	gave it on the	14th day.
2	"	"	5th	"		1	" "	15th "
2	"	"	6th	"		2	" "	16th "
3	"	"	7th	"		2	" "	17th "
2	"	"	8th	"		3	" "	18th "
3	"	"	9th	"		1	" "	19th "
3	"	"	10th	"		1	" "	20th "
5	"	"	11th	"		1	" "	21st "
4	"	"	12th	"		2	" "	22nd "
3	"	"	13th	"		1	" "	28th "

We may simplify these figures by stating that 12 gave the reaction on or before the 8th day; 13 gave the reaction after the 8th but before the

12th; 12 after the 12th but before the 18th; and 6 after the 18th and before the 28th. In three cases the reaction failed.

The only death which occurred in this series of 100 cases was that of the infant 13 months old, which was received into the hospital in a condition of profound depression of the circulatory and nervous system, and died on the 5th day after admission.

The treatment in the majority of these cases consisted in the systematic employment of cool or cold baths, every three hours, whenever the temperature rose above 102.6° F.

In 19 instances, the temperature of the bath at the onset was 90° F. to 85° F., afterwards lowered to 85° F. to 75° F.

In 25 instances, the temperature of the bath at the first was 85° F. to 80° F., and was afterwards continued at 80° F. to 75° F.

In 9 instances, after a few baths at higher temperatures, the bath was given at 75° F. to 68° F.

In 30 instances, systematic spongings were given with water of about 70°, every three hours.

In 3 instances, a cold pack was employed.

In 14, the treatment was symptomatic.

Stimulants in the form of either whiskey or brandy were employed cautiously in most instances, but freely in a few cases, regarding alcohol not merely as a stimulant, but as a rapidly and easily appropriated food. Strychnia was the chief cardiac stimulant employed. Milk formed the chief dietary, but a careful watch was kept on the stools, that the quantity given should not be in excess of the digestive powers of the child. Frequently it was more or less modified by the addition of some diluent.

I am convinced of the great value of the regular and systematic employment of the cool or cold bath in the treatment of this affection. In my opinion, it should be employed without too rigid an adherence to the rules laid down by Brand. A great fall in temperature, as the result of its employment, is not to be desired. As a recent writer has said :— "Baths are to be employed for their action, not on the temperature but on the nervous system, and through it on the heart, respiration, and secretion, especially secretion from the kidneys. The nervous system of the child responds more quickly and energetically to the cool bath than does that of the adult, and the amount of the response, to some extent, has an inverse proportion to the age. It is unnecessary and undesirable that as low temperatures be employed in the case of a young child as in the case of an adult.

The duration of the bath, the temperature of the water, and the frequency with which the baths are employed, should be modified to suit

each case; in the same way as we modify the dosage of other therapeutic remedies. Sudden and severe shock is to be avoided. I believe it to be a great and unnecessary shock to a young child to plunge it into a bath of 68°, or even 75°, at the beginning of the attack. A bath of 90° cooled to 85°, and repeated regularly for the first few days of the attack, gives rise to neither resistance nor signs of shock or collapse on the part of the child. Later on in the disease lower temperatures may be employed, if found necessary to stimulate a flagging nervous system. Even after the pyrexia falls below 102°, I believe the regular use of the cool bath once or twice a day strengthens the heart action and tends to a more rapid convalescence.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Treatment of Varicose Ulcers.

BARDESCU. "A New Method of Treating Varicose Ulcers of the Leg." *Centralblatt für Chirurgie, 1899, No. 28.*

The author reports two cases of chronic indolent and indurated ulcer of the leg which were cured by section of the internal saphenous vein and the stretching of the perineal nerve. Local anæsthesia resulted in the area supplied by the nerve, which was followed by absorption of the induration and a healthy ulcer, even by firm scar tissue.

A case with ulcers on both legs, which had resisted other methods of treatment for some years, became cicatrized in twenty-seven days, from the above method of treatment.

The portion of nerve stretched is dependent upon the site of ulceration.

Massage in Fractures.

GEP. WOOLSEY. "Massage in the Treatment of Recent Periarticular Fractures." *Annals of Surgery, Sept., 1900.*

The author, after quoting Championnière's statements concerning the relative values of mobilization and massage instead of immobilization, in the treatment of fractures, says that :—"Certain fractures, especially the oblique fractures of both bones or the only bone of a limb, require a retentive apparatus to prevent the sliding by, or longitudinal displacement of, the fragments, and thus are not suitable for massage until some consolidation has occurred, requiring from ten days to three weeks. But when one bone of the arm or leg is fractured and is splinted by the other bone, massage may be applied in most cases from an early date."

He does not in any case discard splints, but uses them in conjunction with massage. Moreover, he advises, especially in Pott's fracture, when there is much posterior or lateral displacement, immobilization in plaster for ten days to be followed by massage and passive motion, and warns against vigorous passive motion in recent fractures, in which the

deformity readily recurs, as being a prominent factor in the production of non-union.

Better functional results are obtained by primary immobilization and subsequent massage, than when massage and passive movements have been first employed, but where, owing to persistence of deformity, immobilization had finally to be resorted to.

In the treatment of Colles' fracture by massage and without a splint, the author has had perfect functional results, and claims that the deformity is no greater than when the splint is employed.

Operation for Chronic Constipation.

WILLIAM J. MAYO. "The Ileocæcal Orifice and its bearing on Chronic Constipation, with Report of Two Cases Relieved by Operation." *Annals of Surgery, Sept., 1900.*

The author compares the circular fold of muscle fibres at the ileocæcal orifice with the pylorus, and believes that its chief function is to prevent the too rapid emptying of the small bowel, as well as to maintain some pressure against peristalsis, until the process of small bowel digestion is properly completed.

He points out that as the result of resection of this valve in eight cases for various conditions, that the bowel movements became looser and more frequent than had been customary previous to the operation.

In the first case, the clinical history and local symptoms led the author to make a diagnosis of chronic appendicitis. On operating, a few adhesions were found about the appendix, but a well-marked narrowing at the ileocæcal valve, with distended small intestines, in spite of previous free purgation, was noticed. The operation did not relieve the pain nor the constipation, and she returned to the hospital in five months when a plastic operation similar to a Heineke-Miculicz pyloroplasty was performed. This procedure was followed by relief of the local symptoms as well as of the constipation.

In the second case, a diagnosis of chronic appendicitis was made, but on exploration a normal appendix was found, though a similar narrowing at the ileocæcal orifice existed. A plastic operation, as in the former case, relieved the iliac pain and tenderness as well as the constipation.

Carbolic Gangrene.

FRANCIS B. HARRINGTON. "Carbolic Gangrene." *The American Journal of the Medical Sciences, July, 1900.*

Harrington again draws the attention of the profession to the danger of using moist dressing of weak carbolic acid, when applied to the fingers and toes. He deprecates the present condition of affairs, which enables the laity to procure the poison without a doctor's prescription.

During the last five years he has personally seen eighteen cases, and believes that many cases go unrecognized, as being due to the effect of the treatment applied to the pathological condition.

Transverse sections of the amputated finger, in one case stained with polychrome methylene-blue and eosin, showed that the skin and subcutaneous tissue stained diffusely with the exception of numerous large colonies of micrococci, which were found in the breaks on the surface and could be followed into the deeper tissues. The vessels in this area were thrombosed and colonies of bacteria were found in the blood-clot. Separating this from the deeper layer was a wide zone of round-celled infiltration, among which polynuclear leucocytes were present in large numbers. In places the tissue was liquefied and there was a distinct formation of pus. From this to the periosteum there was a diffuse infiltration of round cells, and many of the small vessels were thrombosed, with areas of hæmorrhage among the tissue.

Needless to say, gangrene does not always follow the application of this solution. Gangrene has followed the application of solutions varying from one to five per cent. The result would seem to depend upon the strength of the solution, the manner of appplying it, the length of application, and upon the power of resistance in the individual.

The macerating effect of a frequently applied solution in loosening the epithelium, and allowing the ready penetration to the deeper parts, explains the strictly localized gangrene. Compression of the bandage would seem to be not an important factor, since cases are recorded where the terminal phalanx continued to bleed on being pricked, while the middle phalanx was undergoing necrosis.

Joseph Levai has shown that weak solutions of carbolic acid, as well as similar solutions of muriatic, nitric, and acetic acid, and of caustic potash, produced gangrene, when applied frequently as a moist dressing for twenty-four hours. The primary effect of these solutions is a loosening and an œdema of the epithelium, then ready penetration to the deeper layers of tissue, resulting in necrosis. Strong solutions, or the pure caustic are less likely to be followed by gangrene, since these produce eschars which resist penetration to the deeper tissues.

Superficial gangrene occurs on the trunk as the result of moist carbolic dressings, but the damage is not so disastrous because of the greater thickness of tissues and because the blood supply cannot be shut off as in an extremity since it is the enveloping of an entire part as a finger or toe with the dressing which causes the complete destruction of the part.

In conclusion, he advises the laity to employ a safer antiseptic, such as boric acid, and when carbolic solutions have produced superficial gangrene, to dress with sterilized water compresses. Total necrosis calls for amputation. *A. E. Garrow.*

Pharmacology.

UNDER THE CHARGE OF A. D. BLACKADER.

A Comparative Study of Digitalis and its Derivatives.

In an interesting paper in the *American Journal of the Medical Sciences,* Dr. Arnold and Dr. H. C. Wood, Jr., detail the results obtained by them in a series of experiments made with the view of determining the relative clinical value of the tincture of digitalis, and its more important glucosides. The recognized proximate principles found in digitalis are: digitalin, digitalëin, digitonin, digitin, and digitoxin. The last named, according to Schmiedeberg, is not a glucoside, although other writers state that it yields glucose. Of these digitin is inert, and digitonin belongs to the Sapenin group; the other three have a very simlilar influence on the circulation. Unfortunately there is much uncertainty in reference to the strength and therapeutic value of these principles, as the names have been applied to impure products, a fact which has been explained by their liability to chemical change in the various manipulations required for their separation. The writers recommend *digitalinum,* Ph. Germanic as a stable product.

As the result of their experiments, they find that both digitalin and digitoxin closely resemble in their action the tincture of digitalis, and if given in equivalent doses will produce similar clinical results. The reason that digitalin has not gained the general confidence of the profession is that it has been employed in too small doses. Ordinarily the dose of digitalin is stated to be from one to two milligrammes ($^1|_{60}$-$^1|_{30}$ grain). Several years ago Dr. Beates* startled some of the more conservative practitioners of medicine by advising them to give digitalin in half-grain doses. The writers' experiments tend to confirm his statements. Judging from their experiments on dogs, it would require approximately $3\frac{1}{2}$ grains given intravenously to produce toxic manifestations in a man weighing 157 pounds (70 kilos). They say that it may be safely stated that 0.015 gramme ($\frac{1}{4}$ gr.) of digitalinum germanicum (Merck) about equals 1 cc. (15 minims) of tincture of digitalis or 0.15 gramme of the leaves. Digitoxin is insoluble, and has distinctly irritant properties. The results obtained in these experiments are epitomized as follows :

(1) Digitalin and digitoxin each represent the full circulatory powers of digitalis. (2) Digitalis, digitalin, and digitoxin stimulate the cardio-

* Jour. Amer. Med. Association, Vol. XXVIII., p. 1209.

inhibitory mechanism both centrally and peripherally. In larger doses they paralyze the intrinsic cardio-inhibitory apparatus. (3) They all cause a rise of blood pressure by stimulating the heart and constricting the bloodvessels. (4) Very large doses paralyze the heart muscle of the mammal, the organ stopping in diastole. (5) The digitalin of the German Pharmacopeia (Merck) appears to be a staple compound, one gramme of it being equivalent to about 70 c.c. of tincture of digitalis. (6) Digitoxin is not to be recommended for human medication on account of its irritant action, which makes it liable to upset the stomach when given by the mouth, or to cause abscesses when given hypodermically; it is also very insoluble, which makes absorption slow and elimination irregular; hence it is apt to accumulate in the system or act with a varying degree of power.

Cacodylic Acid, Sodium Cacodylate—A New Arsenical Preparation.

One of the most important of the compounds of arsenic with alcohol radicles is cacodyl, $As_2(CH_3)_4$, a colourless liquid with disagreeable, garlic-like odour, and very poisonous. Cacodylic acid, $As(CH_3)_2OOH$, is a white crystalline substance, soluble in water, odourless, and comparatively non-poisonous, although containing about 54 per cent. of metallic arsenic. For this reason cacodylic acid and its sodium salt have recently been recommended as a means whereby large doses of arsenic may be administered for prolonged periods. The arsenic, however, appears to be in a peculiar combination no longer poisonous, so that it must be regarded as doubtful whether its therapeutic action is comparable with that of other arsenical salts. The following are some of the more recent reports on the results obtained from its administration. Renant (*Medical Press*, February 14, 1900) speaks highly of its tonic action, on nutrition, and its non-irritating effect on the stomach, and recommends it in the failing nutrition associated with the onset of tuberculosis. The dose is from 2 to 4 grains, but a single dose of 15 grains has been given without unpleasant effects. Widal, at a meeting of the *Société Medicale des Hôpitaux*, March 2, 1900, stated that he had treated cases of tuberculosis and leucocythæmia with sodium cacodylate, and found that the appetite was increased, and the general condition in a marked degree improved. He administered the drug subcutaneously in doses of from $\frac{3}{4}$ grain to $1\frac{1}{2}$ grains. He also stated that there was a rapid increase in the number of the red blood corpuscles as the result of its employment in this way. M. Gautier also preferred the hypodermic method of administration of the drug. Given by the mouth, he thought the drug was decomposed in the stomach, imparting to the breath an

offensive garlicky odour and leading to the elimination of irritating products by the kidney. Zenner (*New York Medical Journal*, March 3, 1900), reports two cases of anæmia in which he administered cacodylic acid with successful results after other hæmatinics had failed.

The consensus of opinion thus far is in favour of the value of the drug when given hypodermically, and it has the great advantage over other arsenical preparations that when administered in this way it gives rise to almost no pain.

Prof. Gautier's formula for subcutaneous injection is :

Cacodylic acid, 5 grammes.
Saturate exactly with sodium carbonate ; then add
Cocaine hydrochloride, 0·08.
Creosote in alcoholic solution, ·30.
Boiled or distilled water to make 100 c.c.

Each cubic centimetre contains five centigrammes of cacodylic acid.

Sodium Metavanadate.

MM. Lyonnet, Martz and Martin report the results (*Lyon Médical*, February 26, March 5, 12 and 19, 1900) obtained by them after a careful and prolonged investigation into the properties of the salts of vanadium, especially the sodium meta-vanadate. They refer to the powerful oxidizing powers of the salts of this metal as indicating their probable mode of action in the tissues. As the result of their experiments they found the toxic dose of the sodium metavanadate to be about 80 milligrams per kilo of body weight. The drug did not appear to act directly on the blood; the corpuscles were not altered, nor the hæmaglobin changed; the heart and the general circulation were not much affected; it was eliminated to only a slight extent by the kidneys. Its chief action appeared to be on the nervous system.

Sodium metavanadate is a white powder, comparatively soluble in water up to 1 in 20. In their experiments solutions of 1 in 1000 and 1 in 10000 were employed. These solutions were quite clear and had only a slight metallic taste. One-half to one milligram was given twice a-day on an empty stomach. In healthy individuals no unpleasant effects were produced. In a series of patients to whom the drug was given and in whom the influence of suggestion was carefully avoided, a marked increase in the appetite with sense of improvement in strength and well-being was recorded; in several of them a considerable increase in weight was noted. These results were most marked in cases of anæmia and early tuberculosis. These investigators regard sodium metavanadate as possessing a distinctly stimulating action on nutrition, but think that it loses the effect rapidly if given continuously; so they

have lately given it intermittently, two or three days only in a week. Its action they regard as similar in some respects to that of arsenic, but clinically its superior; and they consider it as the remedy to be chosen in cases of cachexia and impaired nutrition.

On the Influence of X Rays on Healthy and Diseased Skin.

Dr. Valentin Zarubin of Kharkoff (*Monatshefte für praktische Dermatologie,* May 15, 1899, p. 489), gives a full acount of the action of the Röntgen rays, with a copious bibliography. The general conclusions at which he arrives after considering what has been done up to the present are:

1. The X-rays have proved of use in dermatology, especially in lupus vulgaris; but they have done good also in chronic eczema, in the removal of hair in cases of hairy nævi, and in some cases of ulcers of the leg, acne vulgaris, lupus erythematosus, hypertrichosis, favus, psoriasis, elephantiasis, and freckles.

2. When X-rays are used, there is a good deal of risk of unpleasant and undesirable results. These take the form usually of dermatitis of various degrees of severity, complicated by sloughing, by abscesses, etc.; baldness may also follow, and very exceptionally darkening of the skin and desiccation of the epidermis have been observed.

The rays therefore are of great value in certain diseases of the skin, but much care is required in employing them.

A. D. Blackader.

Review of Treatment.

UNDER THE CHARGE OF A. D. BLACKADER.

On the Treatment of Pneumonia.

Two valuable papers on the treatment of croupous pneumonia have appeared lately. Professor Eichhorst, in an article in the *Therapeutische Monatschefte,* for February, 1900, reviews the different ideas concerning the treatment of pneumonia which have prevailed during the present century, in all of which there has been a seeking after some specific for the disease, a false and illusory hope. He refers to the treatment by bleeding, in the early years of the century, which was replaced after the third decade by an attempt to cut short the fever by the administration of depressants, such as aconite and veratrum. At present croupous pneumonia is regarded as a disease that tends to get well of itself, and any unnecessary administration of drugs is apt to upset the patient's digestion, and compromise his chance of recovery. The most frequent cause of death being failure of the heart, any treatment adopted should from the beginning aim at guarding against this accident. In those cases where there is danger from heart failure, digitalis may render valuable aid, but caffein he regards as being frequently of more service. In very severe heart weakness he recommends the hypodermic injection of oleum camphoratum, every hour, or even oftener. When the patient is young, and otherwise healthy, Professor Eichhorst insists upon the inadvisability of giving any drug whatever. Alcohol should never be given as a routine practice, but only when the state of the pulse and the general conditions show that it is really required. As regards the use of narcotics, Dr. Eichhorst considers that their use requires much care and judgment. When bronchitis is severe, it is not desirable to employ an opiate ; but in cases of acute delirium and continuous sleeplessness, morphia may save life. Professor Eichhorst has never found either the tepid or the cold bath treatment of service.

Dr. Dreschfeld, (*Practitioner,* March, 1900), draws attention to the necessity for prophylactic measures. The sputum of patients suffering from pneumonia should be disinfected. Weak and elderly persons, especially if suffering from bronchial catarrh, should keep away from the sick room. As the micro-organisms of the disease may persist in apartments or buildings in which cases of pneumonia have occurred, the disinfection of such rooms is advisable. Referring to the routine

treatment by large doses of digitalis, he states that he has in several cases given half ounce doses of a freshly prepared infusion every two hours. He found that it was well borne and reduced the temperature and pulse rate. In pneumonia following influenza and in all cases where there is much dyspnœa, Dreschfield gives carbonate of ammonia, and digitalis with nux vomica. If the temperature rises above 103° F., he recommends the application of a cold or ice pack. Cyanosis with a small thready pulse and dyspnœa are indications for digitalis and alcohol. He regards strychnia, especially when given hypodermically, as a most valuable heart tonic. Philip (*Practitioner*, March, 1900), praises the subcutaneous injection of $^{1}/_{100}$ grain strophanthin. In alcoholics, and when the sputum is sanguinolent, Dreschfield gives turpentine either in capsule or mixed with whiskey and hot water.

For delirium when noisy and active and occurring in young subjects, Dr. Dreschfeld considers the cold pack every four hours as very reliable; in alcoholics, cold sponging, and the administration of a full dose of paraldehyde. Low muttering delirium with subsultus tendinum is of evil import and requires free stimulation. With pleural effusion in pneumonia Dreschfeld states that if it is serous, paracentesis should not be performed, except, of course, when the amount of the fluid is large.

At the Wiesbaden Congress for medicine in the discussion on pneumonia, Naunyn recommended potassium iodide when the expectoration is very tenacious, and the subcutaneous injection of ergotin where collapse threatened.

In the *Medical Chronicle*, for December, 1899, Dr. Dreschfeld calls attention to the danger of allowing the patient to drink large quantities of milk, to quench his thirst. The indigestion which is apt to result, may give rise to a tympanitis, which by distension of the abdomen and pressure on the thoracic cavity, may seriously interfere with the heart's action. Large quantities of any fluid, in the latter stages of the disease, may put a greater strain on a weak heart than it can bear, and increase the tendency to cardiac dilatation.

On the Treatment of Aortic Aneurism.

In an article on the early diagnosis and treatment of aortic aneurism, *Medical Chronicle*, March, 1900, Professor Moritz Schmidt emphasises the value of potassium iodide in this affection, if given in doses of from 3 to 5 grammes daily. If the patient has previously suffered from syphilis, he combines with this treatment mercurial inunctions. As no exact observations have been made showing that the drug is of itself able to increase the coagulability of the blood, he associates with its administration the low diet cure, first recommended by Bellingham and

Tufnel. It has been well shown by observations on starving men by Senator and his colleagues, that underfeeding influences the blood pressure, apparently by direct diminution of the quantity of blood. The pulse becomes of lower tension, the blood becomes thicker, the number of the red blood corpuscles becomes apparently increased, and there is a proportionate increase of hæmoglobin. Tufnel's diet consists in the regular administration of 340 grammes of solids, and 240 grammes of fluids, corresponding to 1244 calories, about half the amount necessary at other times for an adult. It was almost always easy to reduce the fluid to 1200 grammes, but that is not sufficient. In one of his healed cases, the fluid was reduced to 340 grammes, and this restriction was well borne for three weeks. Then the patient became so nervous that Schmidt was obliged to increase the amount to between 500 and 600 grammes, and this amount sufficed for a long time. To successfully carry out this treatment great determination on the part of the patient is necessary, but through repeated representation of its great importance much may be attained, especially if the liquid be varied. A necessary part of Tufnel's cure is absolute rest in bed. Baumler calculates that through the diminution of the pulse rate from 96 to 66, produced by rest in bed, 43,000 pulse beats daily are spared, and thereby injury to the wall of the aorta diminished proportionately. It will depend on the course, and on the nervous condition of the patient whether and when more freedom can be again allowed. Dr. Schmidt found it advisable in every case to continue the limitation of the diet and the rest in bed for at least 8 weeks; in severe cases much longer. After this period, this part of the treatment is gradually relaxed. He also holds it to be important if the patient suffer from a catarrh either during or after the cure, that the cough should be checked as much as possible by opiates, and doses somewhat larger than usual may be employed. With reference to other methods of treatment, he states that he possesses no personal experience with attempts to increase the coagulability of the blood by injections of gelatine. He regards this treatment as not free from danger. Electrolysis has also been employed to produce coagulation in the aneurismal sac; and, from the results published, he considers that it should have a trial, in large aneurisms; but in small aneurisms, it would be dangerous to introduce a needle in an aneurismal sac not close to the chest wall. An attempt to obtain coagulation in a sac quite open is always questionable. Several very notable cures have been obtained by this method, in very large aneurisms. Balfour reports 3 cases of cure. Bacchi has cured 11 out of 38. Schmidt reports 8 cases, and states his conviction that if the treatment of aortic aneurism be conducted with confidence and rigidity as that of a curable disease, hospital physicians will obtain, in many cases, good results.

Pernicious Anæmia.

Hunter, in a series of papers in the *Lancet*, February, 1900, after describing the changes present in pernicious anæmia, states the indications for treatment as follows: The removal so far as possible of the cause, which he regards as an infection, whose chief seat is invariably the stomach. All gastro-intestinal conditions favoring such an infective catarrh must be removed. The result of his observations has been to locate the infection underlying the disease definitely in the stomach, and to trace its source either to infection from without, or to the mouth itself. In all cases of commencing anæmia, Hunter considers that special attention should be directed to the condition of the teeth, quite irrespective of any statements made by the patient as to the absence of discomfort arising from them. As a matter of fact, in no case was his attention drawn to the teeth by the patient, nor was any complaint made of them. Discomfort and pain arising from carious teeth indicate relatively healthy conditions, inasmuch as they denote that the local tissues still have the power to react more or less actively to irritation. Here, as in other forms of septic infection, the absence of local reaction is significant. In Hunter's opinion, the hygiene of the mouth deserves the most scrupulous attention, and all teeth that show any signs of commencing cario-necrosis should be either treated, or removed. But the chief seat of the disease is invariably the stomach, where the first infection shows itself as a catarrh, followed later on by deeper seated changes, in the nature of gastritis and glandular atrophy. To remove, or combat this catarrh, washing out of the stomach has been suggested, and may be carried out, in some cases, with benefit, especially in the earlier stage of the disease. In general, however, the gastric conditions are of too deep-seated a character to be affected by mere local washing. Hunter had better results from the use of local antiseptics, and the one which in his hands proved most successful was salicylic acid; although there are other antiseptics of the same character which may possibly prove equally beneficial. He states that he has hardly ever failed to get some improvement from its use. In cases where the symptoms point to intestinal, rather than gastric irritation, the use of intestinal antiseptics is recommended, such as salol, naphthol, and calomel. Where the symptoms are referred to the colon or rectum, these drugs may be supplemented by enemata containing salicylic acid. This local treatment should not replace, but should supplement the use of arsenic, the great value of this drug being now fully established. If once the infection gets firmly rooted in the mucosa, however, mere local antiseptic treatment, even when aided by the use of arsenic, may fail to arrest the disease permanently. The indication for treatment, in such cases is to

combat the action of the poison on the blood, after its absorption. To this end, Hunter proposes, in the future, to make a sustained and systematic trial of serum treatment; but the exact nature of the serum he reserves for later investigations accurately to determine.

William Ewart (*Progressive Medicine*, September, 1900), in reviewing this article states that a case of recurrent pernicious anæmia occurred in his own practice, which well illustrated the statement of Hunter that infection may originate in the mouth. His patient had had eight typical attacks, each ushered in by bleeding of the gums and stomatitis. He recovered completely under suitable treatment directed to the carious stumps and the stomatitis. Dr. Ewart recommends the administration in these cases of arsenic in the form of sodium cacodylate by the mouth and also subcutaneously. Iron, he states, has been regarded as useless, but in his hands it has proved of great service. It requires, however, to be associated with either arsenic or mercury, or with both.

A. D. Blackader.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

The Canadian Practitioner.

April, 1900.

1. A Case of Hysteria. J. T. FOTHERINGHAM.
2. The Successful Treatment of Three Important Cases of Disease of the Eyes by the Combined Method of Hg and KI Internally and Pilocarpine Hypodermically. G. HERBERT BURNHAM.
3. The Repair of Old Lacerations of the Pelvic Floor. M. L. HARRIS.

May, 1900.

4. Some Cases of Intestinal Obstruction and Strangulated Hernia and their Treatment. A. T. HOBBS.

June, 1900.

5. Gasoline as a Surgical Detergent. BRUCE L. RIORDAN.
6. Posterior Positions of the Occiput. K. C. MCILWRAITH.
7. Use of Ergot in Obstetric Practice. CHAS. J. C. O. HASTINGS.
8. Notes on Chloretone. R. D. RUDOLF.
9. An Appreciation of Pryor's Method for Removal of Fibroid Uterus by the Abdomen, with Report of Ten Successive Cases. A. LAPTHORN SMITH.

2. BURNHAM relates the histories of three cases as exemplifications in a most marked degree of the great value of the combined form of treatment for syphilitic diseases of the eye, viz., mercury and the iodide of potash given internally and pilocarpine hypodermically. One was a case of cyclo-iritis of both eyes, of long duration, with the other changes in the eyes usually associated with the long continuance of this disease; a second of iritis of both eyes, with typical diffuse scleroderma; and a third of complete paralysis of the left third nerve, from acquired specific disease.

4. HOBBS describes seven cases of intestinal obstruction and strangulated hernia that had come under his observation, during the past four

years, among insane patients, the employees of the asylum or their families. The four varieties usually met with were found: a volvulus, an intussusception, fecal accumulation, adhesive bands, and three cases of strangulated hernia.

5. RIORDAN was led to use gasoline first for the purpose of cleansing from injured parts what railway employees call black oil. He had found that it does not irritate fresh wounds or granulating surfaces any more than water does. It is best applied by wiping the parts with cotton or sterilized gauze. The gasoline immediately evaporates and leaves the surface dry and perfectly free from grease. His results, as far as early healing and absence of infection are concerned, had been most satisfactory, and had included the treatment of all classes of wounds. In after dressings gasoline is of great value, as it dissolves iodoform and the exudation from wounds and then immediately evaporates, leaving a clean and dry surface. The microscopic appearance of the skin after scrubbing with soap and water, and after wiping off the skin with gasoline, showed that the cleansing effect of gasoline went much deeper and cleaned out the mouths of the hair follicles, sebaceous glands and sweat ducts much more perfectly than scrubbing with soap and water could do.

7. HASTINGS considers that the use of ergot is always attended with more or less danger with the fetus *in utero* ; that it should be given twenty minutes before its action is required, and that it should always be given to secure tonic contraction. A reliable preparation should always be used.

8. RUDOLF reports on the results of the use of Chloretone in experimental work in the Physiological Department of Toronto University. He considers that the drug seems to be an ideal general anæsthetic for physiological work. There might be, however, some doubt about the recovery of the animal, and that would limit its use to where recovery is not desired. The preliminary use of chloroform or ether would increase the risk. It has little or no effect upon the pulse, respiration and blood pressure for hours, but eventually, if the dose be large enough, these become depressed and the animal dies, the heart stopping before the respiration. Chloretone has a most marked and profoundly depressing effect upon the body temperature, lowering it more than any other drug, with the possible exception of alcohol. It may be partially prevented by keeping the animal very warm. Any drug that can exert such an effect on the total heat of the body is one that requires to be used with great caution in medical practice. This is doubly important as the drug is very slowly got rid of, and we know of no antidote, with the exception, perhaps, of external warmth.

The Canadian Journal of Medicine and Surgery.

April, 1900.

1. On the Role of Primary and Secondary Osteoplastic Surgery in the Treatment of Complicated or Compound Fractures of the Extremities. THOMAS H. MANLEY.
2. Complications of Suppuration of the Middle Ear. J. M. MACCALLUM.
3. A Case of Jacksonian Epilepsy in which the Paroxysms were controlled by Chloretone. W. T. PARRY.

May, 1900.

4. Medical Evidence. JOS. MCDOUGALL.
5. Disease in Korea. O. R. AVISON.
6. The Doctor of the Future. ALBERT D. WATSON.

June, 1900.

7. The Relation of Deformity of the Pelvis to Lateral Curvature of the Spine. P. H. GALLOWAY.
8. Clinical Notes on the Use of Eudoxine in Typhoid Fever. A. T. HARRINGTON.
9. Broad Ligament Cyst. CHAS. M. SMITH.

7. While accepting the usual explanation of the mechanics of many cases of lateral curvature of the spine, GALLOWAY is convinced that the primary mechanical fault in certain cases is one which has received scant attention in orthopædic literature. Several standard works on orthopædic surgery refer to deformity of the pelvis in connection with the subject of lateral curvature, but the authors regards the pelvic distortion as secondary to and consequent upon the spinal deformity. In the writer's mind it is much more reasonable to look for the primary fault in the foundation than in the superstructure. That it is unreasonable to suppose that a solid and relatively fixed foundation like the pelvis should fall prey to any distorting influence that could be exerted by such an unstable, jointed superstructure as the spine; while on the other hand, the inherent adjustibility of such a superstructure must cause it to accommodate itself to a tilted foundation. Another point in connection with this subject is that most cases of lateral curvature present deformity in both dorsal and lumbar regions, but it has always been a disputed point, which should be regarded as the primary and which the secondary curvature. If it be admitted that the pelvic deformity is the initial mechanical fault in certain cases, then in this class at least the lumbar curve is primary.

The Canada Lancet.

April, 1900.

1. Splenectomy. COLIN A. CAMPBELL.
2. Trephining and Neurectomy for a Case of Infantile Palsy. J. T. FOTHERINGHAM.
3. A Case of Intestinal Perforation in Typhoid Fever, Operation, Death. G. N. FISH.

May, 1900.

4. Sick and Wounded in War, and How They are Cared For. W. NATTRESS.
5. A Case of Perforating Gastric Ulcer with Infection by the Bacillus Aërogenes Capsulatus; with a Synopsis of the Literature on Infections by this Organism. C. A. PAGE.
6. Neurasthenia. D. CAMPBELL MYERS.

June, 1900.

7. General Cystic Degeneration of the Kidney. H. C. PARSONS.
8. A Case of Concealed Hydrocephalus. THEO. COLEMAN.
9. Cerebellar Tumor with Double Optic Neuritis. J. T. DUNCAN.

1. CAMPBELL relates the history of a case of splenectomy which was under the care of Dr. Nevitt, in the Toronto General Hospital. The patient was a married woman, aged 29 years, who had suffered from chronic pain in the abdomen and back, extreme weakness and pallor, and recurrent diarrhœa. There was no history of malaria. On admission to the hospital her appearance was that of a very much emaciated and anæmic woman. Her sclerotics were clear and pupils active, her tongue clean and temperature normal. Heart and lungs were healthy. On examining the abdomen, which was quite lax, a mass was found on the left side extending from the left costal margin almost to the pubes and forward to the middle line. The mass was quite moveable. The percussion note was dull over the whole of the left side of the abdomen and left flank. The urine was normal. A blood count showed 3,800,000 red corpuscles, 12,000 leucocytes, and 40 per cent. of hæmoglobin. A differential count showed the different varieties of leucocytes to be in about their normal proportions. An incision was made in the loin over the tumor and the kidney was found to be healthy, while the tumor could be felt within the peritoneal cavity. This was opened by prolonging the incision forward and the tumor was found to be the spleen. The vessels were ligated without difficulty, the pedicle then tied *en masse*, and the organ which was nowhere adherent removed. The wound was closed and drained, and the patient made a good recovery. A blood

count on the ninth day showed 2,900,000 reds and 8,800 leucocytes. She left the hospital on the 55th day after the operation, and then her blood showed 4,250,000 reds, 8,000 leucocytes and 50 per cent. of hæmoglobin. Four and a-half months after she showed a marked improvement in appearance, and her red corpuscles numbered 3,325,000, leucocytes 12,000, and hæmoglobin 40 per cent. No nucleated reds or unnatural forms of leucocytes had ever been noted. The lymphatic glands, at least the superficial set, showed no enlargement. The operation had been entirely successful in relieving the distressing symptoms which had reduced her to the condition of an invalid. The spleen showed only a general fibrosis.

2. Fotheringham reports the case of a man, aged 30, who had suffered from severe spasms, from the age of about one year. The spasms were on the left side affecting chiefly the muscles of the side of the face, sterno-mastoid, clavicular portion of the pectoralis major, upper part of the trapezius, the deltoid and biceps, the flexors and pronators of the forearm and hand; in severe spasms the rectus abdominalis; also the left leg showed a mild equinovarus, some contraction and spasm of the gastrocnemius. The spasm was clonic, exaggerated by excitement and disappeared during sleep. Bromides and iodides had no effect upon the symptoms. The motor area was trephined and the pia was found matted down to a dark and apparently sclerotic area of cortex surrounded by a softened area. The cortex of the motor area for the face and arm was removed for a depth of about one-half inch. The arm remained paralyzed for a few hours after recovery from the operation, but by the third day the spasm had gradually returned and was as bad as ever. Three weeks later an incision was made in the left axilla, and part of the median, musculo-cutaneous, musculo-spiral, and circumflex nerves were excised. An incision was also made from the mastoid process down the anterior border of the sterno-mastoid and a portion of the spinal accessory excised. The result of the operation was that motion of the arm, forearm and hand were entirely lost, the limb was cold and marked atrophy had taken place. No sensation could be elicited below the elbow except along the upper and posterior part of the ulna for about three inches. The gait was better than before the operation, and the strabismus hardly noticeable. His general condition of health was fair.

3. Fish reports a case of typhoid perforation, in which abdominal section was performed twenty hours after the first symptoms of peritonitis had appeared. The perforation was found ten inches above the ileo-cæcal valve. The patient died a few hours later.

4. Nattress describes in detail the organization of the Army Medical Service, and the requirements for the care of the sick and wounded in war.

5. Page describes the results of an autopsy performed upon a man who had died of perforating gastric ulcer. The scrotum was immensely swollen and crepitant. Emphysematous crackling was also felt in the thighs. From these localities a bacillus was isolated, whose description morphologically agreed with that of the bacillus aërogenes capsulatus. A synopsis of the literature of this subject is given.

6. Myers discusses two of the most important phases of neurasthenia, spinal irritation and the question of the relation between neurasthenia and incipient mental disease. He considers that instead of the trouble being due to changes in the spinal cord or local structures, that it in reality is psychical. In almost every case of insanity due to the over-exertion of the brain, there is a fairly well-marked prodromal period indicating the diseased balance between nutrition and function. He considers that this prodromal stage in many cases is exactly what is termed neurasthenia, and that proper treatment at that period would avoid the disastrous results which would otherwise follow.

7. Parsons describes a specimen of general cystic degeneration of the kidney, the so-called congenital cystic kidney, removed from a woman aged 25, and where, in an enlarged organ, cysts were found scattered throughout the cortex and medulla alike, and of varying size.

8. Coleman describes a case, in which until the autopsy was performed the diagnosis had been in favour of some form of cerebral tumour, but the autopsy revealed an internal and external hydrocephalus.

9. Duncan relates the history of a case in which he considers that there is a tumour in the right hemisphere of the cerebellum, that it presses upon or involves the right auditory nerve, producing deafness, and that it is probably a glioma. Operation had been advised.

Dominion Medical Monthly.

April, 1900.

1. A Case of Smallpox Recently Discharged from the Isolation Hospital in this City. J. G. Lamont.

May, 1900.

2. Report of a Case of Addison's Disease. R. J. Dwyer.
3. Something of Advantage to the Physician from a Business Standpoint. Dr. Graham.
4. How to Secure Pure Drugs at Less Cost. J. W. Shaw.
5. An Appreciation of Kelly's Method of Removing the Fibroid Uterus by the Abdomen. A. Lapthorn Smith.

June, 1900.

6. A Group of Unusual Spinal Cases. B. E. McKenzie.
7. Presidential Address, Toronto Association for the Prevention and Treatment of Tuberculosis. E. J. Barrick.

1. Lamont reports a mild case of smallpox, and considers that the mildness of the cases that have been appearing of late, is entirely due to vaccination, and urges the rigid enforcement of the by-laws compelling vaccination.

2. Dwyer reports a typical case of Addison's disease, with the characteristic phenomena well marked, viz., indefinite onset, increased mental and muscular asthenia, epigastric pain, vomiting, pigmentation of the skin and mucous membranes, and finally absence of marked emaciation or anæmia. Apart from the interest attached to the case, especial attention is due to the evidence of extensive but quiesent disease of the lungs. The *post mortem* findings showed a wide distribution of unsuspected and quiescent tuberculosis, and also the markedly acute inflammation of the alimentary canal, without there having been any clinical symptoms.

Canada Medical Record.

June, 1900.

1. Progress of Gynæcology. A. Lapthorn Smith.
2. History of the Formation of the Medical Faculty of the University of Bishop's College. Francis W. Campbell.

The Maritime Medical News.

April, 1900.

1. Headache. Andrew Halliday.
2. Placenta Prævia. J. D. Lawson.

May, 1900.

3. Gastric Ulcer. Murray MacLaren.
4. The Treatment of Post-Partum Hæmorrhage. J. Z. Curry.

1. Halliday discusses the subject of headache, and gives an analysis or criticism of the discussion on that subject in one of the sections of the British Medical Association at the meeting last year. In some connection he does not agree with Brunton, Haig, and others as to the cause of migraine, but considers that it may be the result of an abnormal quantity or quality of food, in which case it would be entirely due to

the local condition in the stomach, but where it is of a recurrent nature, outside of the local cause, there is probably also a general one, viz., a neurasthenia or weakness of the nervous system, inherited or acquired, in any case a trophoneurosis whereby the system is unable to supply the nerve energy requisite for the secretion of the necessary amount of gastric juice and particularly its chief constituent hydrochloric acid.

Kingston Medical Quarterly.

April, 1900.

1. Clincal Report of a Case of Infective Endocarditis. Geo. Hodge.
2. The Bubonic Plague. W. T. Connell.
3. A Case of Appendicitis. E. Ryan.
4. Eye Lesions in Paranoia and Paretic Dementia. J. C. Connell.

La Clinique.

Avril 1900.

1. Intérêts Professionnels.

Mai 1900.

2. Nos Députés : Le Bill Tellier.

Juin 1900.

Le Bulletin Medicale de Quebec.

Avril 1900.

1. Un Cas de Chorée Aigue Grave. D. Brochu.

Mai 1900.

2. De l'Allaitement par les Albuminuriques. P.-V. Faucher.
3. Y a-t-il eu Superfétation ?

Juin 1900.

4. Accouchement Gémellaire Avant-Terme Compliqué d'Hydramnios. Malformations Fœtales. J.-R. Chretien.

La Revue Medicale.

Avril 4.

1. Diphtérie.

Avril 11.

2. Filles ou Garçons—à Volonté.

Avril 18.

3. De la Cystotomie Sus-Pubienne avec Drainage dans les Affections de la Vessie chez la Femme. M.-T. Brennan.

Avril 25.

4. Hernie de la Ligne Semi-Lunaire de Spigel. M.-T. Brennan.

Mai 9, 23.

5. Les Maladies Infectieuses:—Fièvre Typhoïde.

Mai 16.

6. L'Hypodermoclyse et l'Entéroclyse Appliquée au Traitement de la Toxicohemie Puerpérale. J.-C.-S. Gauthier.

Juin 20.

7. Traumatismes de l'Œil. Jehin Prume.

Reviews and Notices of Books.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., assisted by CHARLES ADAMS HOLDER, M.D. Vol. 2, June, 1900. Lea Brothers & Co., Philadelphia and New York. Canadian Agents, J. A. Carveth, Toronto.

This volume contains articles on Abdominal Surgery and Hernia, by W. B. Coley, M.D., on Gynæcology by J. G. Clark, M.D., Diseases of the Blood, Diathetic and Metabolic Diseases, and Diseases of the Glandular and Lymphatic System by Alfred Stengel, M.D., and Ophthalmology by E. Jackson, M.D.

Dr. Coley, as the title of his article indicates, deals with a considerable variety of subjects. Gastric surgery, which at present commands so much attention, is treated in some detail. Richardson points out the difficulty of diagnosis in some cases of perforating gastric ulcer, quoting a case in which it was taken for appendicitis. In the Massachusetts General Hospital the surgeons have been particularly unfortunate in the results of operation for the relief of perforating gastric ulcer, losing nine out of ten cases, but it is only fair to state that no case was operated on in less than twenty-four hours after perforation. The brilliant results obtained by other surgeons in this operation do not receive much attention, and a perusal of the article does not quite convey the impression, which we believe should now exist, as to the excellent results of surgical interference in cases of this nature.

The articles on appendicitis and hernia are full of interest. Bassini's operation for the radical cure of hernia is illustrated by very clear figures, borrowed from the International Text-Book of Surgery, which render the successive steps of the operation so clear as to almost render the text superfluous.

Dr. Clark in his review of gynæcology deals with a number of topics in a clear and comprehensive fashion. His admirable summary of the use and abuse of saline injections will well repay perusal, whilst the section referring to the ultimate results after partial or complete removal of the ovaries and tubes cannot fail to interest either the gynæcologist or his critics.

Dr. Stengel's article on the blood contains some interesting observations, although no very striking advances have been made during the

year. The relations of gastric-intestinal infection and pernicious anæmia receive some support from the clinical side from Hunter's observations, and from the pathological aspect Adami's views are of much value and interest.

Löwit has described an amœba in the blood in leukæmic patients which he regards as the probable cause of the disease. This communication is, however, only a preliminary one, and even if the observations are correct there are several links lacking in the chain of evidence.

To the practitioner anxious to keep abreast of current knowledge on the different departments of medicine this annual forms a most valuable guide, and the present volume fully maintains the high standard already attained by the earlier volumes.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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VOL. XXIX SEPTEMBER, 1900. No. 9.

THE ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION.

The Thirty-Third Annual Meeting of the Canadian Medical Association, which was held at Ottawa, on September 12th, 13th, and 14th, was, as had been anticipated, one of the most successful gatherings in the history of the Association, both as regards numbers in attendance and work performed.

About two hundred members registered, the greater part from Quebec and Ontario, although the east and west were well represented by many prominent members of the profession.

The sessions were held in the Academic Hall of the University of Ottawa, and thanks to the care and foresight of the executive, the utmost harmony prevailed. The building chosen was particularly well adapted for the meeting, the hall being comfortable, well lighted and possessed of good acoustic properties, while the committee rooms and exhibitors' quarters were easy of access and commodious.

The President's address, which we publish in full in present number

of the JOURNAL, after briefly reviewing the history of the Association and especially of former meetings in Ottawa, dealt with three questions of general interest to the profession at the present time, namely, Dominion registration, the care and management of cases of tuberculosis, and the establishment of a medical defense association. The reports of the committees appointed at the meeting of 1899 in connection with these three subjects together with a detailed report of the proceedings of the Annual Meeting, will appear in our October number and will be there discussed.

The Address in Gynæcology, which we also publish, dealt with matters of great practical interest to every practitioner, "Mistakes in Diagnosis and Treatment," a subject on which Dr. Gardner from his wide experience as consultant for twenty years is eminently qualified to speak.

Specialism in Medicine, which was happily chosen by Dr. Shattuck as the theme of the Address in Medicine, we also print in the present issue. While many of his hearers would not agree with Dr. Shattuck in all his conclusions, all would agree with him in thinking that the tendency to increase in specialism at the present day is leading to some absurd divisions of medical and surgical work. One of those instanced was the National Association of Gastro-Enterologists, a society lately formed in the United States.

The Address in Surgery will appear in the October number. Mr. Owen's address emphasized some important points in the treatment of tuberculous lesions of the bony tissues and was characterised by brilliancy of expression and many witty illustrations.

The arrangements made by the local committee for the comfort and convenience of visiting members were most complete, and the entertainments provided for their recreation were delightful. The hospitality of the profession in Ottawa is proverbial, and they more than sustained their reputation in this respect. At the termination of the first afternoon session, the members and their lady friends were taken for a beautiful trip on the fine cars of the Ottawa Electric Railway to Brittania on the Bay, a charming little summer resort on Lake Deschenes, where a stop was made long enough to allow of a visit to the pier.

On Thursday evening a complimentary banquet at the Russell House was tendered to the visiting members by the Ottawa members of the Association. After an excellent repast and toasts of "The Queen" and "The Governor-General" had been honoured in the customary way, the toast of "The Parliament of Canada" was responded to by Sir William Hingston and Dr. Roddick, M.P., and that of "The Cor-

poration of Ottawa" by the Mayor. The toasts of "The British Medical Association" and "The American Medical Association," were responded to by Mr. Owen and Dr. Shattuck.

A luncheon at the Rockcliffe Rifle Range on Friday completed the programme of entertainments. The members were conveyed to the range in two large open cars, the route following the bank of the Ottawa river and giving a fine view of the river with the Laurentian Mountains in the background.

We cordially endorse the effort made by the members of the Publishing Committee to secure the continuous publication of the Transactions in the future. The plan proposed by Dr. Blackader to secure a guarantee to cover the expenses of publication for five years is to be commended, and we trust that every member of the association will respond loyally. During the thirty-three years this association has been in existence only twice has an attempt been made to publish the papers presented before the association in a volume by themselves. This can hardly be regarded as creditable to our association. We trust, therefore, that the members of the publishing committee will meet with much encouragement and be able at our next meeting to carry this proposal into effect.

A word of criticism may not be out of place here with regard to the papers presented. Where there are such a large number of papers to be read as in the recent meeting, the rule regarding the length of time allowed to any paper has to be strictly enforced. Fifteen minutes is in many cases too short a time to read a paper in which lengthy case reports or the details of a number of experiments are recounted, and although these may be necessary to the full understanding of the author's argument, to the establishing of his contentions or in drawing conclusions, an abstract would answer better than cutting the paper short in the middle, and the details could appear in the published report. It might even be well for the General Secretary to draw the attention of intending contributors to the rule referred to and to suggest to them the advisability of keeping this point in view in preparing their papers. Another suggestion we might make is that instead of ringing a bell when the time is up, the reader should be notified when only three minutes of his allotted time remains. This practice is followed in several other associations and permits the reader to use the last three minutes for what he considers of most importance, instead of, as is often the case, being interrupted in the middle of a sentence.

The next meeting is to be held at Winnipeg under the presidency of Dr. H. H. Chown.

KAMLOOPS.

It is appropriate that at the first meeting of the British Columbia Medical Association held last month in Vancouver, the subject of the treatment of tuberculosis should have been selected as a main topic for discussion, and this not merely because this is a topic of such immediate interest, but because British Columbia possesses a belt of region which, from every aspect save distance from Eastern centres of population, gives indication for being better suited for the climatic treatment of the disease than any other in the whole American continent.

This may seem a bold statement, especially at the present time, when it is being pointed out from all sides that incipient cases of phthisis are capable of cure even at home, or at least on the outskirts of our large cities. Undoubtedly that is the case, cure can be so effected. Undoubtedly again, the more allied is the "Kurort" in altitude and geographical characters to the district from which the patent comes, the greater the likelihood that the patient in whom the disease has been arrested will be able to return home and engage in work without return of the phthisical symptoms. But undoubtedly, also, climate *is* a factor in the production of a rapid arrest or cure of the disease: statistics are conclusive that improvement is more rapid in a pure mountain air and in an equable temperature than on the plains and where the temperature and moisture are variable. With equal attention to nourishment and rest the patient makes a more sure and more rapid recovery in Colorado than in the Adirondacks, in the Adirondacks than on the sea coast.

But, Colorado has several disadvantages: the great altitude renders it dangerous to transport hæmorrhagic cases thither, save very gradually: the climate is so dry, the air so rarified, that if patients who there maintain the best of health and activity return to the more humid East, they are peculiarly liable to relapse: and thirdly, though those who vaunt the advantages of this region say little concerning this, the clouds of dust brought about by the nature of the soil and the prevalent dryness of the air are most irritating, and not beneficial to the sufferer from pulmonary trouble.

The Adirondacks possess the advantages of pure, ozone-laden air, of a moderate altitude, which permits a return to city life in the East, and of relative nearness to the centres of population. The same is true of Ste. Agathe and the Laurentians and the Muskoka district, though the proximity of the Great Lakes renders the atmosphere of the last resort somewhat more laden with moisture. But all these districts are relatively at a disadvantage because the climate at none of them can be called equable. The frequent great diurnal variations in temperature, the rains, winds and clouded skies which are liable to occur in November and December

and during the period of slowly ending winter, are all unfavourable to the rapid progress of the tuberculous patient, although they are not so unfavourable as the climatic conditions prevailing at the same periods on the plains and nearer to the sea.

The Kamloops district is remarkably, nay, extraordinarily, free from the various disadvantages here enumerated. Situated in a rolling plateau between the Gold and the Coast ranges, the altitude is moderate, from 1200 to 1500 feet, herein resembling and possessing the advantages of the Adirondack and Ste. Agathe districts; the mean annual temperature is a degree higher than that of Toronto, *i.e.*, it is 46.3° F.—although the latitude is 7° higher; the rainfall is only 11 inches per annum, as compared with 45 inches in Montreal, and 37 in Toronto. Whereas at Gravenhurst in the Muskoka district there are 15 rainy days in November, 12 in December, with a miminum of 9 in April, at Kamloops there are 4 in November, 1 in December, 2 in January and February, 6 in March ! Throughout the winter months, that is to say, the climate is remarkably dry and sunshiny. Its position protects this district from high winds; at no time is there extreme cold or extreme heat, and even in the middle of summer the high latitude coupled with the moderate altitude give to the atmosphere a tonic quality, which at the same period is largely wanting in the Adirondacks and Laurentians. Indeed, to quote Dr. P. H. Bryce (to whom we are indebted for these statistics) :—"In Kamloops we have a climate which possesses in a degree, probably not excelled in any climate in the world, the several elements which theory, as well as the experience of hundreds of persons, has proven to be of the greatest importance in the reconstruction of tissues and the rapid restoration to health of those persons suffering from consumption and other diseases due to defective nutrition."

Judging from the accounts of cases mentioned to us by Dr. Tunstall, of Vancouver, Dr. Jones, of Victoria, and other leaders of the profession on the West Coast, Dr. Procter, in the paper which we print in this number, does not nearly do justice to the remarkable recuperative effects of the Kamloops climate. It will be noted that the cases he mentions of relapse are both cases which transgressed the rule about length of stay in a pure atmosphere. It is generally admitted that where there is marked disease of both apices three years is insufficient to ensure against relapse. Vancouver during the rainy season, and the interior of a modern ironclad, would be recommended by no one as places of immediate return for old tuberculosis patients. But the very frankness and modesty of Dr. Procter's statements is in itself a strong support of our contention.

It is, however, one matter to have a favourable climate to recommend to our patients, quite another matter to advise them to take advantage

of that climate. At present the only class of patients whom we can send to Kamloops are young, adult males in the earliest stages of tuberculosis, who can without difficulty stand plain food and plainer surroundings. For Kamloops is as yet completely undeveloped as a health resort: there is no sanitarium; what hotels there are are second class; there are but one or two farm houses offering comfortable accommodation and sound healthly food suitable for an invalid. We urge most strongly upon our British Columbia confrères to utilise all means in their power to remedy this state of affairs. Theirs, we firmly believe, is the opportunity to raise the Kamloops district into the position of one of the great health resorts of the world. Situated as it is along one of the great routes of world travel, they should be able to attract to it invalids from the far West and from the far East, nor should they find the provincial government and the great railway corporations most affected by the prosperity of the district unwilling to aid them in their endeavours.

THE PLAGUE IN GLASGOW.

The outbreak of an epidemic of bubonic plague in Glasgow, Scotland, brings this dreaded disease as near to us here in Montreal as it can well get, unless it becomes established elsewhere on this continent. A line of ocean steamers running between Glasgow and Montreal forms a direct communication between the two ports, and at first sight it would seem probable that if the disease, as now appears likely, should obtain a firm hold in Glasgow, the danger of infection from this source would be great.

On looking at the matter a little more closely, however, and studying the various ways in which infection could reach us there is less cause for alarm.

That an individual boarding a ship at Glasgow in the incubation period of the disease could pass the quarantine station at Grosse Isle, is rendered almost impossible by the fortunately short incubation stage, the extreme limit of which is one week. Thus, in a vessel leaving Glasgow with a clean bill of health, all cases in the incubation stage would have developed the disease long before this side was reached, and should be easily detected.

That infection can be conveyed by means of infected objects is doubtless possible, though rare, and this method of conveyance can practically be excluded, when we remember that we have to do, not with a locus of infection from a port where the disease is endemic, but with one from a port in which every possible means is being taken to control its spread.

There remains, however, yet another source to be considered, and one against which it is perhaps, the most difficult to guard. We refer to conveyance of the disease by means of the rats which infest every ship. These animals are, as is well known, peculiarly susceptible to plague, and infection spreads among them with great rapidity. Should a ship become infected in this way, it would vastly increase the danger of the disease obtaining a foothold here.

How then are we to guard against the introduction of this pest? The means by which the disease is recognized and the preventive measures to be enforced against it, are fully described in an article by Professor Adami in our April number, to which we refer our readers. We wish, however, to again emphasize what is there stated,—that in the past the disease has obtained its strongest hold in the foul and unhealthy portions of communities, and to urge that our city authorities be not lulled to sleep by a false sense of security, but at once "seek out and remove the weak spots in our hygienic defenses."

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BY

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TUBERCULOUS LESIONS FROM A CLINICAL POINT OF VIEW.

Mr. President and Gentlemen,—Though the substance of the address which I have the high honor of presenting to you to-day may entirely fail to arouse in you any measure of satisfaction, yet I think I may, at any rate, claim your kind appreciation for its title. For it gives you the assurance that I am not going to ask you, even in your imagination, to pass any of this September day in that gloomy room in which Death is made to deliver up his grosser secrets; nor in that other place where, in an atmosphere of methylated spirit and oil of cloves, you are accustomed patiently to endeavour to unravel the tangled threads of morbid tissues. My remarks will deal with tuberculous lesions as the surgeon meets them day by day in hospital ward and operating theatre, and in private practice. And if I shall find occasion to ask you to go beyond these spheres, it will be to take you to some of those beautifully-placed convalescent institutions in which, when full of gratitude for having triumphed over the distress of chronic disease, or the risks which are inseparable from its operative treatment, and when full of the hope of permanently improved health, the tuberculous patient spends possibly the very happiest weeks of his life.

It is, I make bold to say, a good and wholesome thing for a surgeon now and then to get clean away from pathologists and morbid histolo-

gists—to play truant, as it were, from his unbending schoolmasters. In recent years there has been, perhaps, too much inclination to apotheosize the morbid anatomist. His brow has been decked even with roses, and now standing high in his suit of sable, he looks upon the clinical surgeon as if his chief duty were to supply him with material.

In the title of my address are the words "from a clinical point of view," and desiring to emphasize the fact that the word *clinical* related solely to remarks made and work done in the sick-room and in the theatre, I thought it well to call attention to its exact meaning, but on looking it out in "Liddell & Scott," I found to my dismay that κλινη was not only *that on which one lies, a couch or bed,* but, secondarily *a bier.* I confess that the discovery somewhat disconcerted me. If a *bier,* why not a *mortuary table?* At any rate, the word *clinical* is of wider signification than I supposed it to be; so that the pathologist might have right on his side when he claimed that clinical instruction, begun at the bedside and carried, perhaps, into the operating theatre, is not actually complete until he has written the epitaph.

Even on this side of the middle of the dying century, institutions were in existence in which much pathological work was actually done within the walls of the hospital itself. This, of course, we know to have been quite wrong. But surely we have now gone to the other extreme: the pathological laboratory is constantly getting further and further away from its source of supply. The pathologist is no longer a practitioner of medicine, his interest is not in the *case* but in the *subject.* Like the carpenter, he does not interest himself in *living* material; his thought is only for dead tissue. The surgeon sees the human tree during its life (and perhaps helps to fell it), but he now, unfortunately, rarely follows it off his estate. So with the student; he does his clinical surgical work at one time and in one place, and his pathological work at another, and he is unable, I regret to say, to follow any individual case, or any part of it, straight from the ward to the laboratory.

The present arrangement is, of course, incapable of alteration, but it is an unfortunate one for the student; and on his account it behooves the surgeon to do all that he can towards welding the pathological details of his case with the clinical features, so as to represent to his class that the two aspects are inseparable and ought always to be considered together. If, for instance, he is demonstrating a tuberculous knee-joint, he should, whilst discussing the clinical features of the case, explain precisely the histological changes that are taking place; and supposing that a resection or amputation is eventually resorted to, he should show in what respect the morbid conditions harmonize with, and in what respect they differ from, the account which he predicted. He

should, as far as possible, make his teaching independent of his colleague in the laboratory, for the specimen which the latter takes out of a jar of formalin or alcohol, is no more like the real condition as it exists in the wards than canned salmon is like a fresh-run fish.

The clinical surgeon has of late, I think, been a little too much under the influence of the experimental pathologist and bacteriologist. When some important surgical problem awaits a solution which cannot be effected in the ward or on the operating table, the clinical surgeon turns to his enthusiastic and obliging friends in the laboratories, who in order to help him, straightway proceed with careful thought and gentle hands to sacrifice upon the altar of Hygeia some mongrel curs or a few of those tailless rodents which, so far as I can see, have been provided solely for the use of the experimental physiologist and pathologist. Then, because such and such a thing happens under such and such circumstances in the laboratory to the dog or guinea-pig, the experimental pathologist is apt to assume that in different circumstances it must happen also in man himself!

When in due course the pathological and bacteriological Athanasius formulates his creed, I am afraid that I shall be burned at the stake. But in saying this I trust that no one will jump to the conclusion that I would stop experimental research. Indeed, I think it absolutely necessary, and I am strongly of opinion that the life of a man is of more value than that of many sparrows (or guinea-pigs), and that the clinical surgeon is deeply indebted to the experimentalist for much invaluable collaboration. But if there is one matter more than another in which the work of the experimentalist has led to faulty generalization from a clinical point of view, it is with regard to the course of certain tuberculous lesions.

No one will think, I trust, from what I have said, that I would underrate the work of the experimental pathologist; it certainly is not so, for I well know that it is to these workers that we owe our knowledge of the precise cause of diphtheria as well as of tuberculosis, of tetanus and erysipelas, and of many other serious diseases. And knowing the cause we have been enabled in many cases greatly to influence the course of the disease by treatment. Indeed, it would be almost impossible to over-estimate the practical value of experimental laboratory work both to the profession and to the public. Nevertheless, there are some of the public who, in their ignorant well-meaning and in their well-meaning ignorance, would once and for all stop such beneficent research. But stranger still, there are some members of our own profession in England who also try to get in the way of scientific progress. Fortunately, however, they have not the power of doing much harm!

Not long ago we used the words "strumous" or "scrofulous" when we were in a surgical corner; but to-day these indefinite terms are deleted from our nosology; indeed, they are without scientific meaning, and we now call *tubercle* by its proper name, our patients reaping the benefit of our greater precision.

From the medical point of view an unusual amount of attention has lately been drawn to the subject of tuberculosis by means of excellent societies which have recently been organized to carry on a never-to-be-ended and universal warfare against the disease. Taking its birth upon the Continent, the scheme has now received a considerable amount of support in Canada, in the United States, in England and elsewhere, and its effect cannot be but for good. Indeed, I believe that its influence must be already becoming felt.

Three Important Facts.

There are three great facts in connection with tuberculosis of which the public must be made fully conscious:

The first is that the disease is *communicable*. The truth and importance of this fact we have ourselves only of late entirely realized. The public, therefore, must be allowed a due amount of time before they generally accept it. But accepted the fact must be, and it behooves each one of us to do all that he can towards promoting its acceptance.

The second is that the disease is *preventable*. This follows almost as a corollary to the previous statement, and when the truth of it becomes widely and fully understood, how great will be the responsibility of those who wilfully disregard it!

The third fact is that the disease is *curable*. And as we are to-day considering certain surgical lesions of tuberculosis from a clinical point of view, I shall seize this opportunity of entering somewhat fully upon the question of curability.

The Curability of Tuberculous Lesions.

A few years ago tuberculosis was regarded as a well-nigh incurable affection, for the word had been chiefly reserved for hopeless cases of pulmonary consumption, and of meningitis complicating certain chronic diseases. To call a surgical lesion, therefore, *tuberculous* was tantamount to signing the patient's death-warrant. It was in the public estimation a term of definite import and of dreaded omen. But among the many uncertainties of our professional environment, one thing has of late become quite certain, namely, that tuberculosis is not necessarily of the intractable nature that it was formerly considered to be. So far as my practical acquaintance with the disease is concerned—and I have worked at a large general hospital and at the largest children's hospital in

London for a quarter of a century—tuberculous lesions are exactly what they used to be. But we know much more about them than we did, and careful clinical study and microscopical and experimental work in the laboratory have enabled us to treat them more successfully, and, therefore, to warrant us in taking a much more hopeful view of them. But I would like to know if the surgical lesions of tuberculosis which are met with in your dry, bracing climate are just as we have them in Western Europe. Many of you have studied tuberculous lesions under your own bright skies and also in the Mother Country, whose borders are washed by the seas and whose life is so greatly influenced by the Gulf Stream. From your cradle you have been taught that the sun never sets on the Empire of our dear Sovereign Lady, but I am afraid that when some of you have come over to us in a bad season you have wondered if there are not parts on which it never rises. Well, do you find that tuberculous lesions are exactly the same clinically in the two hemispheres? Every country has a climate, just as it is said to have a form of government, which is equal to its deserts. Ours is a damp climate, which exactly suits the soil and the race; but it is a bad one for the unhappy individual in whose blood the bacilli of tuberculosis are lurking, as well as for those who by heredity or surroundings have acquired that condition of tissue which renders it vulnerable by the mean bacilli of tuberculosis and adapts it for their cultivation.

Sometimes when I have been going round my wards I have asked a visitor to note how large a proportion of the cases are tuberculous. Is it thus also in *your* surgical work? Do chronic tuberculous affections of the hip, knee, spine, lymphatic glands, shoulder, elbow, foot and hand represent a very large proportion of the lesions which come under treatment by the general surgeon? Have you, in proportion, just about as much tuberculous disease in Canada as we have at home; and does it take the same course? Whilst I am here I would particularly wish to see tuberculous cases and to be informed on these points.

Much of my clinical work has lain amongst senior students; I come in contact with them just as they have left the laboratories and are proceeding to put what they imagine to be the "finishing touches" upon their professional education. They have spent many delightful hours in a pathological laboratory and in a white cotton smock; they have cultivated, studied, and even tamed bacilli; they have seen how potent they may be for evil, and they are firmly of opinion that if once such germs gain access to a suitable spot in a suitable individual, nothing short of the most vigorous surgical measures can suffice for the eradication of the disease and for the emancipation of the host. This is the students' bacteriological faith, and except they act up to it their patients cannot

be saved. Many young practitioners also hold that faith. Where do they learn it? Not in clinical surgery. The public have also begun to believe it: but the public will believe anything that they are told if only they are told often enough. And if the statement is couched in semi-scientific or mysterious phraseology, they seize upon it with all the greater avidity. Otherwise, how would bone-setters, vendors of patent medicines, and other quacks, qualified and unqualified, flourish like a green bay-tree in the sunny corner of an arboretum?

But is the outlook in advanced tuberculous disease necessarily so hopeless in the absence of active surgical treatment? To answer this very important question I will instance an imaginary case of a young man, who, a year or so previously, hurt his back in a fall at a gymnasium. He has now pectoral neuralgias, and dull pains between his shoulder blades and in his back, which have probably been ascribed to "rheumatism." Eventually the discovery is made that the third and fourth dorsal spinous processes are unduly prominent, and it is evident that the bodies of those vertebræ have undergone complete tuberculous disintegration. The disease is close behind the arch of the aorta, and the surgeon is unable to get at it. He cannot scrape it and he cannot irrigate it with germicidal lotions. I believe that there are some surgeons who would attack it if they could: *rien n'est sacré pour un sapeur*; but, fortunately, he cannot possibly get at it. What then is to be the future of this patient? Is he going to die the death as the guinea-pig would in the laboratory? Most certainly not. He is to be made to lie about, in the sun if possible, and he is probably going to get well. Everyone here has acquaintance with such an individual, or if he does not knew him personally he has seen him in the street. He is rather a short man with peculiarly high, square shoulders, and with a boss between them. And not only has he long since outgrown his tuberculous disease without any operative assistance whatever, but could we see him in his own home we might not improbably find him—and I say it with some regret—surrounded by a crowd of apparently healthy sons and daughters.

Such a case is one of great clinical importance: it shows that a man with an undoubted tuberculous lesion of the first magnitude can completely recover without having undergone any operative procedure whatever. At the end of the nineteenth century it is somewhat unusual for any patient with any surgical affection to be allowed the opportunity of showing what he can do without submitting himself to operation, so that such an account as that which I have just instanced, becomes not only important but actually interesting. One rarely hears or speaks now of the *vis medicatrix naturae*: surgical zeal has apparently rendered it not only obsolete but superfluous.

Another instance of the favorable course which undoubted and severe tuberculous disease may run without active surgical interference, is seen in the case of old-standing hip-joint disease, the boy actually "growing out of his trouble." The disease, let us suppose, began at that period of life when it is customary to send a boy to school, and his school-life was frequently interrupted and was continuously clouded by the affection. But he is now a young man at college, and though he walks lame and is precluded from taking an active part in athletics, still he is vigorous, and he has evidently and completely triumphed over his disease. I am not sure that I have in clinical work ever before used the specious expression, "growing out of a disease"; and possibly I might not do so now if I thought that there were any students or unqualified persons present, for its adoption might prove unfortunate or even dangerous. It is a rather favorite expression, however, amongst parents and other ill-informed persons when confronted with a child with a tuberculous lesion. Would they expect a garden to grow out of its weeds or a field out of its thistles? No; it is a popular superstition, but, like most erroneous beliefs, it is founded on a substratum of truth. For, as a matter of fact, many patients do "grow out of" tuberculous disease, and, strange to say, sometimes most markedly so after a surgeon has made the clear pronouncement that without operation recovery is quite impossible. A boy, for instance, has chronic tuberculous and suppurative disease of his tarsus; he is albuminuric and very ill. His able young surgeon says that unless his foot is removed the boy will die. This, of course, is a very unwise thing for any surgeon to say, for he cannot possibly know for certain exactly what is going to happen. But what *may* happen is this—the operation is declined; the child is put under the care of another practitioner who, though not so clever a surgeon, is, perhaps, older and a better man-of-the-world. By good luck rather than by good management the disease clears up, and in a couple of years' time the boy is walking about with scarcely a limp. "See that boy?" says the proud father. "Well, Dr. Omniscient wanted to cut off his foot, but his mother and I would not let him!" According to the rules of the game the foot, of course, ought to have been amputated; but Nature does not always play according to the rules, as the young practitioner sometimes finds out to his cost. *Knowledge* is the prerogative of youth, but *wisdom* should come with years.

I am aware that I have wandered from that case of chronic hip-joint disease; I was instancing it merely to say that though the head of the thigh-bone and the socket in which it worked have been quietly destroyed by a growth of tuberculous granulation-tissue, so that the limb is greatly shortened, still it is now, years afterwards, solidly fixed and fairly ser-

viceable. The skin has remained unbroken and the man (for he is a man now) has completely triumphed over his disease.

In connection with this little batch of reports I would like to make a few disconnected statements, chiefly from a clinical point of view:

1. Chronic inflammation of a joint in a child or young person is always tuberculous—except in those very rare cases in which it is due to hereditary syphilis or osteo-arthritis.

2. Tuberculous inflammation may completely destroy a joint, and then leave it solidly and soundly synostosed, without the surrounding tissues or the skin having been implicated, as in *caries sicca.*

3. If tuberculous granulation-tissue breaks down into a fluid, that fluid is not *pus,* and the collection is not, properly speaking, an *abscess*—unless, by bad fortune or by worse surgery, it has become infected by septic micro-organisms.

4. The fluid collection is not to be treated as an abscess—by incision and drainage, that is—but is to be opened and emptied, and scraped and cleansed of its unhealthy lining of granulation-tissue. Then the wound in the skin is to be completely closed by sutures; firm pressure is to be evenly applied, and the part is to be kept absolutely at rest—by a splint if practicable. It is no news to most of you to be told that the success attending this line of treatment leaves, as a rule, little to be desired, or that for this important advance in practical surgery we are chiefly indebted to the patient researches of our friends with the smock frocks and the guinea-pigs.

5. I have failed to discover that iodoform is of any peculiar value in the treatment of tuberculous lesions. At any rate I have long since discarded it, and I have not noticed any falling off in the results of my practice in consequence. Iodoform is an irritant and a poison; it is apt to be septic, as germs can grow upon it, but I have no knowledge of the truth of the statement that mushrooms have actually been cultivated on it.

Some time since a lady was sent to me for my opinion about a tuberculous ulcer of the anus which a practitioner had long been treating with iodoform. She earnestly begged me to consider if I could not recommend some other local application, as she said that the smell of the yellow powder rendered her "socially objectionable." This was for her a very serious matter, as she kept a fashionable boarding house, and whilst many members of her household seemed to notice the peculiar odor, some few of her young men "paying-guests" actually appeared to recognize the drug itself.

I confess that I have a sort of feeling of sorrow for a surgeon who thinks that he cannot successfully carry on his practice without iodo-

form, just as I have for the lady who deems patchouli to be indispensable for her toilet.

That tuberculous lesions often get well without surgical assistance, and sometimes even without their serious nature ever having been suspected by either surgeon or patient, is now a matter of common knowledge. It often happens that when a surgeon is examining an individual, for one purpose or another, he comes across unmistakable evidence of tuberculous lesions which have undergone permanent cure. It may be that an elbow or wrist is found synostosed; that a white scarring of the skin shows where a patch of lupus has undergone spontaneous cure, or that a small and shortened finger or toe gives evidence of a quiet, long-forgotten, tuberculous dactylitis.

The Forcible Straightening of Carious Spines.

The direct treatment of the angular deformity, resulting from tuberculous disease of the spine, is a subject that a few years ago was thrust somewhat vigorously upon us, not only by articles in the medical papers, but by the reproduction of photographic representations of ghastly clinical procedures in the pictured journals of the lay press. This is hardly the way in which one would expect solid surgical work to be advanced. One remembers that there was a somewhat similar outburst in the lay press, a few years ago, when the Koch treatment of tuberculosis was being boomed in Berlin. For this, however, the illustrious Koch must not be held responsible; he was forced into bringing forward his work before he had been able to assure himself that the results of his injections justified them in being regarded as *curative*. Immediately there was a rush to the German capital, and medical men lent themselves and their names to lay journalism and their portraits to the illustrated papers, passing glad to obtain notoriety in such a beneficent, or at any rate in such a popular, movement.

I do not know how it may be with you, but in Western Europe every new method or invention is at once greedily accepted and not improbably made the means of unmistakable advertisement. It does not much matter whether it is to turn out a real success or not, the point seems to be to have one's name associated with it whilst it is on the crest of the wave. To have one's name in front—and, somehow or other, to keep it there—that is the problem with us; for, you see, the struggle for existtence has of late become very keen in certain parts of the Eastern hemisphere.

I say that I do not know how it may be with you, but I hope and I think that in your peaceful Arcadia you can practise your profession undisturbed by many of the anxieties, struggles and temptations by

which your less fortunate *confrères* are sometimes well-nigh overwhelmed in an older country. And long may it so continue with you, not only for the good of your honourable profession but also for your own self-respect and happiness.

To affirm that the forcible straightening of carious spines must needs be unsurgical, simply because it is a reversion to the ways of the bone-setter, would be unfair, for the blundering bone-setter sometimes did good by chance. But, at any rate, he experienced none of that sense of responsibility which a surgeon must feel when he is proposing to straighten a tuberculous spine. It is obvious that in straightening the angle the tuberculous ulcer of the vertebra must be widely opened out, and that if the neural arches have been already cemented together, this rigid support must be broken across. And, supposing that this is done, and that the patient survives the risks, which are inseparable from the procedure, will the widened osteal ulcer duly heal and the neural arches again become solid? Possibly so. But—and this is the point—will there be no further recurrence of the hump?

Though I should be grieved to stand in the way of surgical advancement, I do not mind getting in the road and temporarily impeding traffic whilst we are taking time to consider the route, and are assuring ourselves that the stream of surgical practice is going in the right direction. My opinion is that the deformity of Pott's disease does not lend itself to operative treatment; that forcibly to interfere with it is to thwart Nature in her good attempts at affecting a curative consolidation in her own way—and Nature's ways, as a rule are not unworthy of our respectful recognition. I think, further, that in a short time we shall hear very little about the method. That is what I *think*; but I am absolutely *sure* of this, that if a child of my own had an angular deformity of its spine, no person on earth should be allowed roughly to meddle with it. This is the only trustworthy way of testing one's opinion concerning the therapeutic value of speculative methods of treatment, and when a surgeon is planning some new scheme of procedure it is a good thing for him to measure it out first with the Golden Rule—would he accept such and such a treatment for himself, for those nearest and dearest to him? But surely, after all, each one of us actually does this, though some apparently have greater belief in heroic measures than others. At any rate, let us not be precipitate or over-enthusiastic with respect to each untried method as it is introduced. *Festina lente.*

There is a small class of cases for which forcible rectification of the angular deformity may, perhaps, eventually be found very suitable, namely, in a certain few of those in which pressure by bone, or by organizing inflammatory deposits has taken place upon the anterior

surface of the cord, so that the patient has lost the power of voluntary movements in the lower extremities. In a few such cases, I might perhaps be eventually inclined to resort to forcible straightening rather than to a laminectomy, an operation of which, by the bye, I have but a poor opinion.

The humped back of spinal disease is, of course, an opprobrium, and it is small wonder that the surgeon is anxious to efface it. But if he had given proofs of such laudable anxiety at the beginning of his treatment of the case he would probably have had no hump to deal with. I have no hesitation in saying that, even at the present time, the treatment of spinal disease in its earliest stages is too often half hearted and sometimes actually blameworthy. It may be urged by way of excuse that at the very beginning of spinal disease the symptoms are so equivocal that the practitioner hesitates to even whisper his opinion lest the disappearance of the symptoms should suggest that after all he is an alarmist. He knew that the girl had symmetrical pains in her chest, belly or legs: he knew that she got easily tired at play, or that she was inclined to loll and lie about when others were full of activity, and that, regardless of nursery manners, she persistently sat at meals with her elbows on the table. He suspected spinal disease; he even told the parents that the girl should be kept quiet. He may actually have gone so far as to sketch out a plan of treatment which was designed to secure a certain amount of rest, but he was slack in seeing that even this small measure was carried out. In short, he had not the courage of his opinions. So the case was allowed to drift.

Oh, for the spirit of Lady Macbeth who called out to her weak-kneed spouse and fellow-practitioner :

"Infirm of purpose! Give me the dagger!"

I am a great admirer of Lady Macbeth though I am fully aware that her character is not faultless. She was not the sort of person, perhaps, to be trusted with the dissection of tuberculous glands from the neck, or of operating on a case of torticollis, but how splendid she would have been in the treatment of early spinal disease! There would have been no half-measures with her!

The Treatment of Vertebral Caries.

If a practical surgeon were asked, What is the proper treatment of early spinal disease? he would unhesitatingly say *rest*. Yes, absolute and uninterrupted rest. But there is only one way of insuring such rest for a child, and that is by making him lie flat in bed. As I shall set forth directly, he is not to be kept actually in bed all the time: but in every case the treatment is at any rate to be commenced by imprisoning him

in a pillowless bed—not, let him clearly understand, if need be, as a punishment. This, I feel sure, is the only way of successfully inaugurating the treatment of *rest*. But it is of little use if, when in bed, the patient is allowed to roll about, sit up for his meals, or to hang over the side of the bed in order to pick up a dropped toy. The details of the treatment must be so seriously considered, and the medical man must make it his business to see that they are loyally and thoroughly carried out. He must not content himself merely with giving his instructions; the parents will very likely want careful looking after as well as the boy, or else as soon as the doctor has left the house, or at any rate after a short period of rest, the boy will probably be allowed to do pretty well what he likes, and so the case will quietly drift. What the circumstances demand is the presence of a sort of clinical policeman in the house in the shape of a hospital-nurse.

I know that there are all sorts of schemes, corsets, apparatus and braces (as my American friends call them) for treating spinal caries without keeping the child flat. But they are all wrong—wrong in theory and wrong in practice; and if they could be cast into the bottomless pit, and every case of spinal disease could from the beginning be treated by continuous rest in the horizontal position, there should be no more of those unsightly humps to invite speculative interference. Of course, I do not include in my anathema Phelps's box splint, the double Thomas's splint with head piece, or any form of cuirass which takes the child in bodily and keeps him flat. Indeed, the design of each one of them is well-nigh perfect; but what I want utterly and severely to condemn is the modern ambulatory treatment of spinal caries. Indeed, I think it probable that after all the stir about the new treatment of humpbacks by forcible straightening has subsided, a most important beneficial clinical outcome will be that every surgeon will feel himself compelled to be far more careful in the adoption of patient and efficient prophylactic measures in the early days of the disease.

As I look back through many years of active hospital practice, I cannot divest myself of the thought that the plaster-of-paris jacket-treatment, of which, I confess, I have been a warm advocate, must be held reponsible for much of the existing deformity of Pott's disease. Many a time have I seen the angular projection coming on and increasing when the child has been getting about in a plaster-jacket or some other form of support.

Though the child is to be lying flat for six, twelve, eighteen or more months, he is not to be shut up in a close bedroom. The windows are to be kept open and he is to be carried out every day into God's blessed sunshine, which is as necessary for warm-blooded animals as for plants.

His muscles are to be maintained in good trim by massage, but he is to be kept all the time in a horizontal position. I know that in these days of activity and progress such unromantic treatment demands great confidence on the part of the parents in the judgment of the practitioner who insists upon it, but no little experience of it enables me with the utmost confidence to recommend it. Certainly it is not a new method. Hear what Sir Benjamin Brodie says upon the subject. This is the sentence at the very beginning of his valuable chapter on the *Treatment of Caries of the Spine*: "From the first moment, therefore, in which the nature of the case is clearly indicated, the patient should abandon his usual habits and be confined altogether on his bed or couch."*

Naturally, one turns also to see what Percival Pott has to say upon the question of the treatment of the disease which bears his honoured name. And it is somewhat of a disappointment to find him so taken up with the subject of the *Palsy of the Lower Limbs* which follows destruction of the bodies of the vertebræ, that apparently he has not the inclination to discuss general measures. But it is all delightful reading, and even to-day it is brimful of clinical instruction. What a relief it is to read a chapter or two of Pott, or Brodie, or Chassaignac after one has been poring over the pages of some modern text-book, in order, as the saying is, to "keep abreast of the times!" Pott always seems to put his red velvet sleeve around one's shoulders and to draw one aside from the bustling crowd of the "busy practitioners" (in whose peculiar interest modern text-books are quaintly said to be written), and to talk to one in the delightful manner of those whose literary style has not been spoilt by the habit of counting words on telegraph forms, or of compiling "copy" of precise length, and in a limited time, for medical publishers!

However, Pott has a few remarks to make in a general way about the treatment of the latter stages of spinal disease, but I am afraid that they will not prove acceptable to most modern surgeons any more than my own poor remarks on that subject may do. Still, it is a great pleasure to know that one is in good company the while! Pott is talking about the treatment by "spinal-supports" and "steel bodices," and as I am telling you what he says I feel his velvet sleeve leaving my shoulders and actually passing around my neck. He says that though the use of these pieces of machinery is so general, and the vulgar prejudice in their favour is so great, he has long been convinced of their utter inutility; and, moreover, that he is satisfied their effects are mischievous.

Speaking generally, the acceptance of a simple, unromantic clinical method makes a far more serious demand upon the parents' or the patient's confidence than does the bidding of him to do some greater

* "Observations on the Diseases of the Joints," 1850, page 342.

thing. This is understood and acted upon by the quack, who, merely to create an impression, inserts in a lengthy prescription some rare and perhaps rubbishy ingredient which he thinks the apothecary will be unlikely to have in stock; who writes out a fussy dietary, with unworthy attention to detail, and who, having failed to effect the promised cure, endeavours to preserve an unenvied reputation by sending his confiding patient to some far distant watering-place. In spite of education, people love quackery now just as much as they did in the time of Elisha; and the higher they are in the social scale the more they seem to hanker after it. The brief clinical record which we have of the tuberculous lesion of the Syrian Lord Roberts, admirably illustrates these points, for "Naaman was wroth, and went away, and said, Behold, I thought he will surely come out to me, and stand, and call on the name of the Lord his God, and strike his hand over the place."

No; if he was to undergo the water-cure, it certainly should not be in a muddy Israelitish stream; he knew of a couple of spas in Damascus which were really high-class! "So he turned and went away in a rage." But being "a great man," he was not obstinate; so he changed his mind, followed out the instruction to the letter, and, to his intense delight, attained the reward which sometimes falls to those who do exactly what their doctors tell them.

Here, so far as this address is concerned, the clinical aspect of the case of Naaman ends; but it still contains an important lesson from a public point of view. For, when the gallant officer found that his cure was complete, he went straight to his good doctor, whilst the tear of gratitude was still in his eye, and begged his acceptance of a substantial and appropriate reward for the great service which he had rendered.

If during the unromantic treatment of spinal caries the weather is very bad, and the patient has to be kept in his bedroom, the window should be open, and, if necessary, and practicable, a fire should be burning—not a poisonous, parching gas fire, however, as one finds in so many bedrooms. The condition of the bedroom of town-dwellers in England is a subject which greatly needs discussion, if not actual legislation. The bedrooms in many London houses have recently become the recipients of a kind of back-wash of that unwholesome tide of æstheticism which was so much in evidence about twenty years ago. The walls are heavily papered and covered with fans, silly brackets and ornaments, dirty-looking hangings and rubbishy photographs. The table or chest of drawers is spread with an unclean cloth, on which are arranged more photographs and dozens of nick-nacks, every one of which is a dust and germ collector. The furniture and window hangings are heavy, and the room is stuffy, dusty, and teeming with germs of all sorts, I should think, and not improbably with those of tuberculosis.

Such rooms should be stripped bare, fumigated and washed; the walls should be distempered, and the floors should be treated to a weekly scrubbing. A small iron bed, a wash-stand and a couple of rush-bottomed chairs would be about all the furniture allowed. This does not sound artistic, I admit, but it is healthy; and it is better to be healthy than "artistic;" but art which is not subservient to intellectual and physical health is false and unwholesome.

When much of my work lay with out-patients I used to have the children with spinal caries placed in the empty boxes in which oranges are imported. Such a box could be bought for a few pence, and an old blanket folded on the bottom of it served as a mattress. In the process of evolution the orange box became for certain children a Phelps's box-splint. By some such means a child with caries can be carried from one room to another or taken into the open air without risk, and by slightly tilting up the box or tray the child can see what is going on around him, and thus he feels that he is not entirely excluded from the bustling world. It is an important element in treatment that the patient should realize that he is still very much in the world—in the bright and sunny world in which his friends are permitted the enjoyment of work and relaxation.

Some years ago a man of about thirty was brought to me with the stiff, straight back, and all the other signs of lumbar caries. He lived close to a cricket-field, and it was early summer; so, having him fitted with a rigid jacket, I told him to spend the whole day lying on his face and watching the games. Thus he was able to enjoy to the full those three essentials for the successful treatment of the disease—rest, fresh air and sunshine, and he made a complete recovery.

But supposing that the child with dorsal caries has been kept lying flat from the very first, the surgeon cannot even then promise that no deformity shall ensue; because the vertebral ulceration heals by granulation-tissue, which is ultimately converted into fibrous and osseous scar-tissue. This, in consolidating, of necessity undergoes a considerable amount of contraction, which may suffice to draw the fronts of the vertebræ together. The more extensive the ulceration the greater is the amount of cicatricial contraction, and the more pronounced the deformity.

Here, in Eastern Canada, it would especially ill become me to speak lightly of the value of cod-liver oil in the treatment of the disease under consideration, but perhaps I may humbly suggest that there are other remedies which may be looked to in the circumstances. As a matter of fact, I am a great believer in the value of the oil, but I would not against his will insist on a child taking a dessertspoonful, or even a teaspoonful of it three times a day—as the manner of some is. So

forced down it is apt to upset the stomach as well as to cause diarrhœa, and it may then be found floating upon the surface of the dejections.

We are all apt to get too much in the habit of prescribing medical and dietetic treatment by routine, ignoring the fact that constitutions are not equally made to pattern. You have heard of that submissive patient for whom Sir Andrew Clark had laid down a very particular and strict regimen which ended up as follows: "And after dinner one cigar, not a strong one; a single Manila cheroot." In answer to the illustrious physician's inquiry, a week later, as to how the dietary had answered, the unhappy patient, whilst replying that he was certainly better, pleaded to be let off the cheroot, which had invariably had the result of dispossessing him of his dinner! Possibly, however, after all, it was that cheroot which had played the most important part in effecting the gentleman's improvement!

Cream, butter, bacon and other fatty foods are all good for tuberculous patients, but I think that there is nothing quite so valuable as cod-liver oil. And if a patient assures me that he *cannot* take it, I often manage successfully to administer it after breaking up a conspiracy amongst his olfactory, optic and pneumogastric nerves. He probably confesses that he likes sardines; so, without becoming aware of the trick, I have the preservative cotton-seed oil emptied away, and keep the sardine box filled with fresh cod-liver oil, of which every day he unconsciously takes a substantial amount.

For a tuberculous infant I order systematic inunction of the limbs and body with cod-liver oil every evening after the warm bath. I fully understand that this is apt to make the child "socially objectionable," but this is overlooked when the mother finds that the child is improving, and steadily increasing in weight. A steady increase in weight is a splendid clinical omen in the treatment of tuberculous or quasi-tuberculous patients.

Prophylaxis.

The extermination treatment of tuberculosis is a subject in which every member of the community should be encouraged to take a personal and intelligent interest. It is a great mistake to allow it to be regarded as merely "a doctor's question." And to wage a successful war of extermination the attack should be begun right early. It is a question which is of vital importance for the nursery, the school-room, the dwelling-house, the store, the office, the barrack—in fact, it concerns every department and every period of life. The disease is everywhere, and its eradication is, therefore, a matter of concern to every one.

It has not yet been shown that the offspring of tuberculous parents are born actually tuberculous, but it is beyond question that they are very prone to inherit a peculiar physical condition which renders their

tissues an easy prey to the germs of the disease. The family history of many patients who at the threshold of life become the subjects of enlarged glands, or of chronic affections of the bones or joints, gives incontrovertible evidence of there being a marked hereditary disposition in the matter of tuberculosis.

So comes the question, ought there to be a law preventing those who are undoubtedly tuberculous taking upon themselves the responsibility of parentage? There are some who would answer this affirmatively and without hesitation. But what would the Church in general say to it, and what would the tuberculous curate in particular say to it? He would tell us that he reads in the very beginning of his Book that he is to "Be fruitful and multiply;" and, to do him justice, it must be admitted that in England, at any rate, he does his best to carry out this instruction to the very letter. But let him finish the injunction—Man was to be fruitful that he might *replenish* the earth. Now, though I do not claim to be in possession of peculiar knowledge on this point, I cannot think that the Great Architect of the Universe, who "saw everything that he had made and, behold, it was very good," could have desired that this beautiful world was eventually to be stocked with so large a proportion of tuberculous rubbish.

I am fully conscious of the fact that in suggesting the desirability of preventing the marriage of tuberculous subjects I am advancing a somewhat extreme measure, but surely the subject enters very largely into the question of prophylaxis. It is one, moreover, that will have to be deliberately approached and dealt with some day, and that, perhaps, soon. I do not think that our Houses of Parliament as at present constituted will be anxious to occupy themselves with an attempt to solve this question, vast as its Imperial importance is, but I think that the County Councils which we have lately established through England might find the task not uncongenial. The question is fully as important as that of water-supply, or of protection from fire, or of the isolation of infectious disease, each of which is already in their grasp. Indeed, I think that it falls in under the last heading. And what scope it would afford for discussion!

You will remember that when Horatio and Marcellus joined Hamlet on the platform after the appearance of the ghost, and showed great anxiety to know what had been the subject of his remarks, Hamlet tried to put them off by telling them that his communication had been something of quite a commonplace nature, on which Horatio ejaculated:

> "There needs no ghost, my lord, come from the grave
> To tell us this."

I do not know what space the "perturbed spirit" had traversed in

order to deliver his address to the unhappy Prince, but I have travelled about four thousand miles to deliver mine. And if you feel inclined to suggest that there was no need for one to come so far to tell you that which I have just unfolded—that it is commonplace and by no means worthy my long journey or your short one—I shall conclude with Hamlet's retort :

> " Why, right ; you are i' the right ;
> And so, without more circumstance at all,
> I hold it fit that we shake hands and part."

As a matter of fact, I have not, like the ghost, temporarily escaped, for the purpose of this communication, from a place where sulphur, burned in the open, is the ordinary domestic fuel, but I am here in response to a kind and highly flattering invitation from yourselves. I had, indeed, made arrangements for spending my autumn holiday, which certainly did not include two weeks of sea-sickness; but when I received your President's command (for so I regarded your invitation), I at once scattered my personal plans and considerations to the winds and decided to accept it. And let me tell you that coming to Ottawa is not like going amongst strangers, though it is my first visit here; it arouses in me a feeling something like that experienced by a man who is making a homeward journey, for my father was a Canadian. From my infancy I have had pictured to me, and have been encouraged to interest myself in, your forests and rivers, your orchards and wide fields of waving corn, your green pastures and still waters, and your lingering snows (kindly notice that I have put the snows *last*). I have also constantly heard, from my childhood, of the intense loyalty of the people of this great and fertile country, and of the loving devotion of its sons and daughters to that dear Lady who is, indeed, a Mother to us all.

Lastly, let me tell you that your complimentary invitation came to me just after those dark days of trial in which an ambitious, a cunning and an unscrupulous race had been endeavoring for ever to overwhelm us. Dark indeed were those days; but darker still would they have been had we not known that your strong-limbed and keen-eyed sons were standing by us in our time of need ! It is certainly not for a humble individual like me to presume, or to attempt to say what the feelings of undemonstrative England may be towards Canada. I allude to this and to other circumstances only that you may in some measure see with what pride I accepted your invitation, and in order that you may the more fully appreciate the sincerity of the thanks which I herewith tender you for thus directing my course to Ottawa, with an inclination eastwards to Nova Scotia—and Halifax—where, in 1812, my good father was born.

SOME SUGGESTIONS AS TO THE TREATMENT OF LOCOMOTOR ATAXIA BASED UPON THE EXPERIENCE OF THIRTY YEARS.*

BY

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The descriptions of the disease by Deschenne and Romberg, which were given to the world nearly fifty years ago, present a graphic and entirely satisfactory picture of this serious affection, to which comparatively little has been added since. The symptomatology and pathology described by these writers are full, and really vary but little from the accepted views of the authorities of to-day, except in the matter of detail. Many clinical features of the disease, which are now advanced as novelties by a new generation of neurologists, were not only found by them but by their immediate successors. The existence of syphilis as an etiological factor, it is true, was not at first directly referred to although it may have been considered one of the results of sexual excesses which they both emphasized so strongly, while they did dwell upon and give deserved prominence to causes which are to-day often omitted from consideration.

It would seem as if the addition to our knowledge of tabes has resulted in later years in the discovery of the arthropathies and trophic disorders, the relation of the abolition of the reflexes, including the Argyll-Robertson symptom, the ocular complications, and the recognition of an hereditary form. Certain refinements have been attempted by those who would divide the disease into the "leg and the eye types," with reference to cases presenting predominant disorders of motion, or, on the other hand, marked ocular symptoms,—a distinction which seems to the writer unwarranted, when we consider the extreme irregularity of the distribution of the lesion in the cord itself or its superior sensory extension, and the likelihood of the foci of degeneration to be found in isolated regions elsewhere. There is a close relationship, at best, between the different forms of cerebro-spinal sclerosis, and a somewhat extended experience has taught me to avoid too close distinctions, and the tendency to pathological and diagnostic hair-splitting.

In such a paper as this, no matter how great the temptation, the writer is naturally prevented from more than briefly considering certain phases of the subject which have come under his notice, and it is my intention,

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as well, to consider the treatment of the disease. Much depends upon the duration and severity of the symptoms, there being no doubt that, where the ataxic is seen early enough, there is in some cases much to be done.

All of the textbooks describe tabes as a slowly developing and progressive affection, but the study of a large number of examples convinces me that there are frequent exceptions, and only recently have I been consulted by a patient, who has also seen Dr. Osler. In this man the disease had pursued an unusual course, so far as its acute nature was concerned. Mr. G. L. K., 33, habits good, drank moderately of beer and whiskey ; no history whatever of syphilis. About twelve years ago he had swelling of both knees and feet without pain, which disappeared, leaving him with a sense of weakness and a difficulty in locomotion ; and from his description this appears to have been of an atactic nature. He, however, regained his ordinary vigour, pursuing his occupation of commercial traveller until 1897.

While in Columbus, Ohio, at this time he noticed a numbness in both limbs which extended from the knees downward, the soles of his feet being, perhaps, the most insensitive. According to his story there was a variation in the extent of the paræsthesia and a sort of intermission, there being a period of normal sensibility, which would last for four or five days and was followed by an absolute loss of feeling. After a week or two of this, his gait became affected, and it was with extreme difficulty that he could walk at all, because of the lack of co-ordination. He recovered also from this attack in a few months and continued apparently in the best of health until eight weeks ago, when he began to have characteristic pains in both legs, which shot up through the feet ; there were pains as well on the right side of the head and right arm. There was, for a month or so, some numbness in both plantar surfaces, but this seems to be absent now. There is at times an imperative desire to urinate, but no other bladder symptoms. There is no constipation.

An examination of the eye shows a sluggish condition of the pupils both to direct light and accommodation; both knee jerks were gone. His gait shows a well-marked ataxia, and when he walks he plants his feet far apart, totters and staggers, but can stand with his eyes closed. Most of the motor symptoms are present, so far as the lower extremities are concerned, and his is apparently an exceedingly easy case for diagnosis. The history, however, of the two subsequent attacks and the rapid *debut* of the present one impressed me, as I learn it had Dr. Osler.

I first saw him June 25th of this year, and recommended absolute rest, administered ergotine, and frequently burnt his back with the Pacquelin cautery, directing his wife, in the intervals between his visits, to paint

him systematically with vesicating collodion. The result of this treatment is shown by a rapid improvement, his sensory symptoms having absolutely disappeared and his gait being only slightly embarrassed, and at each visit during the last two months there has been a weekly gain. I have no reason to believe that this access, like the last, will not disappear; and I believe it to be due to some acute congestion of the posterior column of the cord, but it is extremely probable that if the same causes are brought to bear, which were a special kind of overwork and attendant physical exhaustion, that there will be ultimately established a continuous and progressive degeneration, with symptoms characteristic and advancing.

I have elsewhere reported cases that have developed within a few days or weeks after injuries, some of which would naturally have nothing to do with a disease such as this. In one of these cases the violence which fractured the leg evidently, in some unknown way, led to the development of tabes. Those who have studied and described railroad injuries have called attention to a neurosis resembling locomotor ataxia, and the writer has repeatedly seen examples of an apparently acute nature where, with anæsthesia, there was an associated ataxia, which in some of the cases was undoubtedly dependent upon the loss of sensibility of the plantar surfaces, and resulting inability to co-ordinate. In these cases there were none of the infallible signs of central degeneration, such, for instance, as optic nerve atrophy, and appropriate treatment usually resulted in a cure. It behooves us to be on our guard in making a diagnosis of locomotor ataxia where the matter of litigation arises, and not to accept sensory disturbances, disorders of locomotion, and even disappearance of the patellar reflex, which may be transitory, as final indication of a really hopeless affection, for I have know them all to exist in curable patients. It is quite possible that many of the cases that have been said to have been aborted by one drug or other were of this nature, and I really think that after all the condition of the optic nerve is the true criterion.

There is no disease of the nervous system that has drawn forth so many therapeutic suggestions, and for which so many persistent attempts have been made to discover a specific remedy, or to devise a line of treatment. The agents recommended include drugs, hydrotherapy, revulsives, and the exhibition of mechanical force, electricity, etc., but, for the most part, little or no good has resulted from any one thing. The experience of many years convinces me that most tabetics are favourable subjects for "expectant attention," and clutch at any straw that may be thrown to them, and say they feel better for a time. Many derive astonishing if temporary, benefit from some new drug, and the writer, like

others, has sometimes been prompted to be unduly sanguine in advocacy of some new remedy. Many of us have been in the habit of using routine alternatives, and all, I think, have pinned our faith to the possible discovery of syphilis in this case or that. Even with this tangible etiological factor present, I feel that the iodides and mercury have not done very much for established tabes.

In the disease known as pseudo-tabes of Fournier, where there is often a somewhat rapid posterior spinal deposit or acute pathological progress, enormous doses of iodides of sodium or potassium are useful, but in more advanced or slowly developing destruction of the cord, I believe them to be worthless. In this connection a word or two may be said about the generally held belief that syphilis is always the cause of tabes, Erb and others going so far as to hold that 90 per cent. of all ataxics are syphilitic. Of the several hundred cases seen by the writer, it was absolutely impossible to get any *authentic* history of syphilis in more than 50 per cent., and in arriving at this conclusion, the fact was borne in mind that nervous syphilis often results from trivial primary lesion. It must be admitted that some of us are too prone to form our preconceived idea of what the causes should be, and obstinately hold to it, insisting that the patient, despite his denials, has at some time or other been infected, even when we have not a vestige of proof that such has been the case. From a study of a large number of cases that have fallen under my observation, I have, especially of late years, been forced to believe that this disorder, as well as general paresis, which sometimes follows it and to which it is closely related pathologically, developes after protracted and excessive mental and physical exhaustion of various kinds; and such exhaustion may be not only due to the use of narcotics, stimulants, or the indulgence in excessive venery in conjuction therewith, as the Germans claim, but to a perfectly innocent, but excessive exercise of power and a consequent enfeeblement. There are ataxics who have had nothing to do with women and in whom the existence of syphilis is out of the question. The patient K. referred to, is a commercial traveller whose several attacks of acute spinal congestion closely followed upon the laborious work in bending over to pack or unpack his sample trunks. I have known it to develop after fatiguing exposure in the field, in overtrained gymnasts, or persons who have been in the saddle for a long time, or, in fact, in subjects who have undergone great and protracted physical strain. Nitrate of silver, in its day, has had its vogue, and even now there are many who use it in all their cases. The writer has long since abandoned it as he has the silver phosphate which promised for a time to be of use. This and other metallic salts are equally unreliable, and the alkaloids,

which affect the circulation of the cord, do little or no good except in acute conditions and for the relief of pain.

Looking back over a number of years, I find that most good has been done where little or no medicine has been given, but where the cases have been managed, first, by insuring *absolute* rest, occasionally, by the suspension treatment, and finally, by the systematic and persistent cauterizing of the back. Special symptoms have been treated by hydrotherapy and the exhibition of remedies to diminish or control pain, or to improve the general nutrition. So prompt have been the benefits of rest that, wherever possible, the patient should be ordered to his bed, or where this is impossible, to be completely inactive. In one Canadian case, who came to me with pronounced ataxia and a train of characteristic and advanced symptoms, an enforced rest in bed for six months, with the attendance of a trained nurse, resulted in the disappearance of all the symptoms with no subsequent return. When we consider that a cause of the disease is exhaustion of some kind, the *rationale* of this treatment becomes apparent.

While everyone who has seen much of tabes must be forced to the conclusion that there is no agent that which can be absolutely relied upon to control pain but opium or its alkaloid, we may under certain circumstances avail ourselves of one of the coal-tar products, either antipyrine or phenacetin, which may be administered in a way recommended by de la Tourette, or the bromate of phenol may be given in ten grain doses every two hours, either for the leg pains or the trunk crises, alone, or with morphine. The French neurologist referred to gives from a gramme and a-half to two grammes of phenacetin in twenty-four hours (in ½ gramme doses), combining it, in the event of violent pain, with laudanum, ten drops of the latter being given after each dose of the former. In the gastric crises, sulphuric ether, either as Hoffman's Anodyne or in pearl form, or the spirits of chloroform, will often break up a paroxysm of pain.

The use of morphine in a routine way is undoubtedly most pernicious and is very apt to lead to the formation of the habit, so that it is better, if possible, never to let the patient know what he is receiving; and for this reason as well as others, a hypodermic syringe should not be given to him. The case books of the writer contain many instances of morphinomania in connection with tabes, and it may be fairly assumed that some of the cases of post-tabetic insanity are nothing but the results of the morphine habit. A patient recently seen, who had for fifteen years treated his own pains by morphine injection, ultimately became morally debased, and as he increased his doses, developed a characteristic insanity, with delusions of grandeur and confusional excitement. Tabes, on the

other hand, is sometimes, as the writer first pointed out nearly twenty years ago, quite apt to be followed by a general paresis, which is undoubtedly due to the extension of the sclerosis to the cortical layers of the cerebrum; but the diagnosis should be easy.

The therapeutic suggestion of spinal elongation and nerve stretching have led to the more or less general adoption of these mechanical means by a large number of persons, within the past fifteen or twenty years; but nerve stretching has been practically abandoned, except by Chipault and one or two others. Systematic extension of the spinal cord seems to be still a popular, if not an entirely satisfactory form of treatment. Originally exerted by means of suspension in the Sayre-Bryan apparatus, it has been modified by the invention of de la Tourette, or substituted by the unyielding jackets invented by German physicians. The writer, for some time, has used the balance board, by which the head is depressed and the feet held by proper straps, so that the action of the Sayre apparatus is reversed. Besides the avoidance of the danger which has attended the use of the former operation by the patient himself, the extension of the cord seems to be much greater. It would seem, by the statistics collected by Mocyntkovski, Raymond, Blondell and others, that a certain proportion of cases are greatly helped by suspension, the symptoms being ameliorated in at least 50 per cent. of the cases, and in twenty of de la Tourette's forty cases, there was a prompt subsidence of the pains, genito-urinary and ocular troubles, a disappearance of Westphall's symptom, and an immediate gain in the walk.

A short time after the recommendation of this treatment the writer published an analysis of five cases of tabes which were treated by suspension by the Sayre appartus. Some of these patients received as many as two hundred suspensions, no medicine being given. There were in all an abatement of pain, improvement in the walk, disappearance of Romberg's symptom, and in one or two a permanent benefit, which was undoubtedly due to this treatment and nothing else. For many years I have employed it in those cases where there was no optic nerve atrophy and no symptoms indicating coarse disease, and really believe, though many observers have allowed it to fall into disrepute, that it is worthy of trial in the disease, where there is at best so little to be done.

The actual cautery has, perhaps, proved of the greatest use, not only for the relief of pain in the largest number of cases, but it has revulsive effects of its own, the exact nature of which cannot be determined. Certainly its application over areas of nervous distribution, which are the seat of pain and where a kind of neuritis sometimes exists, is to be recommended. In many apparently intractable cases, the writer has been in the habit of using it once or twice a week over the spinal column, and

so often has a decided and a lasting improvement taken place, that he unhesitatingly recommends it as a routine agent.

A case is recalled of a woman who applied for relief ten years ago, presenting a most striking picture of tabes in the commencement of the third stage. Her walk was absolutely disorderly, and she was practically helpless. During all these years, regular cauterizations have been made by Dr. G. Deforest Smith, with the result that the patient to-day is in good health, and shows no awkwardness of gait. To this patient little or no medicine was given. This is but one of many cases treated in this way with equally encouraging results.

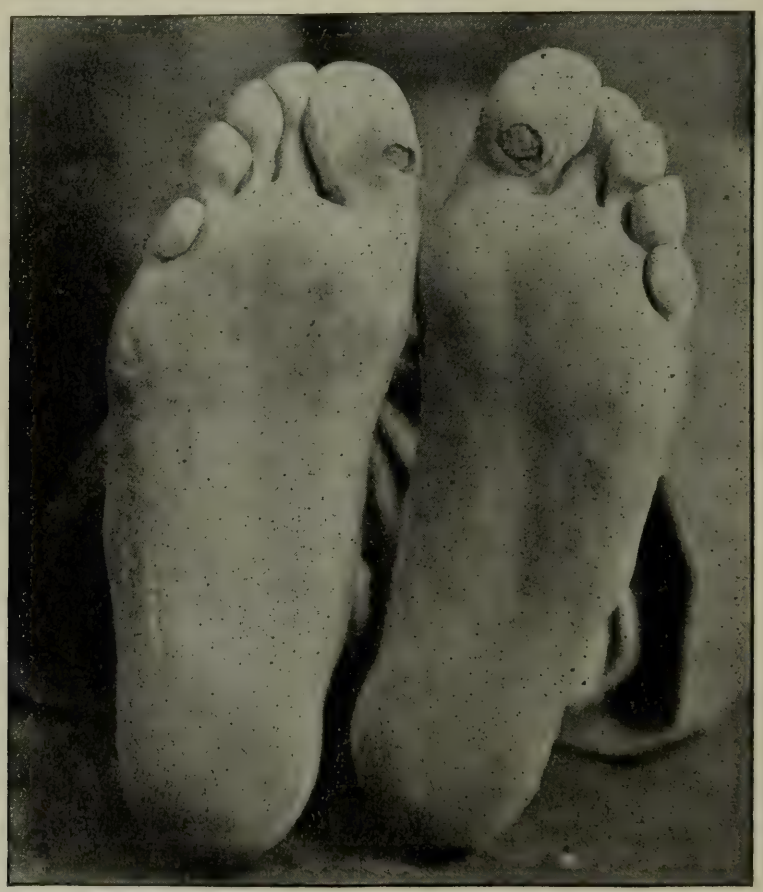
For the arthropathies of the great joints there is little to be done, except to recognize their significance and avoid useless medication. They have, too often, been mistaken for evidences of rheumatism, and even in one reported case, an enlargement of the hip joint of this nature was considered to be an osteosarcoma. The liability to the first mistake in diagnosis is due to the limited beneficial results that attend the use of salicylates, alkalies, and colchicum, and there is no doubt, as has been pointed out, that there is a very close connection between well recognized morbid processes due to uric acid deposit, and certain true affections of the nervous system.. The progressive and slow character of the joint enlargement, the absence of any corresponding or sufficient pain, and the subsequent development of other symptoms of locomotor ataxia, should clear up the diagnosis, but we are nevertheless sometimes puzzled when the joints are affected in this peculiar way, as they usually are at a comparatively early stage. As it is not rare for arthropathies to be associated with fulgurating and other pains of suggestive nature, we may give large doses of salicylate of soda, and the writer has found alternate use of hydriodic acid useful. Besides these agents there are others which have been more or less popular but unreliable.

Perforating ulcer, or "mal perforant," which is by Gillies de la Tourette considered a true arthropathy, is a rare feature of locomotor ataxia, and most obstinately resists treatment, for the reason that the tissues which are its seat are with little or no reparative power, being usually hardened and anæsthetic. I have seen three cases of this unusual condition in ataxics, one of them being symmetrical, the other being unilateral.

The peculiar, small, plantar ulcer, which constitutes the lesion, rarely exceeds two or three centimetres in diameter, and usually occupies a site over the metatarso-phlangeal articulation of the great toe, where pressure is commonly made. It may appear over the heel or over the metatarso-phalangeal joint of the little toe, or in fact anywhere, where the shoe pinches near a joint. There is usually a dense, white thickening of

the skin, and so depraved a condition of cutaneous nutrition, that superficial sloughs, blistering, or collections of purulent matter, may occur from time to time, shortly disappearing, while the original lesion continues about the same. Many of these patients find their way to the chiropodist, as they are not disposed to connect this trouble with the spinal disease, which usually up to this time presents few suggestive symptoms.

X., 48 years old, of fairly good habits, contracted syphilis eighteen years ago, which was followed by light secondary symptoms and has since presented late syphilides, which yielded to treatment three years ago. He was married six years after the infection, and has one healthy child.



He has not had tertiary cephalagia, or other cerebral symptoms, and is able to do business as well as ever. About four years ago he had cramps every night in his calves, which lasted for a short time, and two years later, in every change of weather, there appeared the characteristic lightning pains. With each snowstorm, fulgurating pains shot down the back of the thighs and legs, and after an attack of this kind, there were left small circumscribed spots of tenderness in various regions, especially over the insteps and in the toes. Thinking this was gout, he took colchicum,

which gave him relief in about eight hours. About four years ago, numbness began in the right foot and afterwards in the left, so that there was some anæsthesia in both great toes. There have been shooting pains in the testicles and anus. At present there is slight atony of the bladder, so that urination is slow. The bowels are in good order, Romberg's symptom is absent, and the tendon and pupillary reflexes are gone. There is some grey atrophy of the fundus, his walk is slightly ataxic, but this is not noticeable to most people. This gentleman, about three years ago, consulted a chiropodist in regard to what he supposed to be two corns, one on either foot, and the latter proceeded to treat him with nitrate of silver, salves and other agents, which did no good whatever. The two ulcers, which formed over each metatarso-phalangeal articulation, became deeper and broader, and from time to time there was separation of black eschars.

I saw the patient in March, 1900, finding two erosions, which were surrounded by a reddish, insensitive zone, the skin of the under surface of the right being detached and slightly distended by a thin, greenish pus. Both ulcers were about 50 mm. deep and floored with a greyish, insensitive, firm slough. About their periphery was an overhanging ring of dead and toughened tissue, which was pared away, while the centre was stimulated and scraped. Absolute rest, the feet being kept elevated as much as possible, the use of alternative hot and cold applications, and the local application of galvanism, resulted in immediate improvement. In a month the cutaneous surface was healthy and there apparently remained no trace of the ulcers except a slight induration. At the end of this time, disregarding my advice, the patient returned to his work, remaining on his feet most of the day, travelling about the country, and generally abusing himself. There was a relapse, the ulcers reappeared and shortly after a third made its appearance over the metatarso-phalangeal articulation of the little toe of the left foot. In this case, a feature was the existence of two small spots of induration over the metacarpo-phalangeal articulation of the third finger of each hand. Whether anything will come of these, I am unable to say.

In the reported cases, which are not numerous, some writers have called attention to the communication of the ulcer with the cavity of the joint. In X's case I could not pass the probe any distance, and the injection of a lead salt and the use of the radiograph, failed to show any picture of such invasion. My discouraging experience is, I find, a common one, although I believe if the treatment had been carried out, as is now being finally done in this case, good results may be expected. Certainly, the prospect of amputation should be a warning as well as an incentive to try everything, first, that has the least promise of aid, and as a last

resort, nerve stretching of the plantar nerves of the foot may be tried, as Chipault reports the cure of five cases by this surgical means.

In closing, a word of caution must be given in regard to the empirical treatment, which we are all so apt to adopt, either for the purpose of *doing something*, or of satisfying our invalid. While our earnest endeavours should be to help him if possible, it should be in the direction of an improvement in the general condition, and the treatment of special symptoms, rather than in the use of gold or silver or various remedies, which belong to the armamentarium of the mediæval leech than the progressive physician of to-day. Miserable sufferers whose ataxic tread is already almost on the edge of the grave, like the victims of phthisis, seemingly never give up hope, and to such as these it is almost a cruelty to prescribe useless and harmful drugs.

NOTES ON ATROPINE.*

BY

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In the short time allowed for a paper, I venture very briefly to direct your attention to some actions on animals of the drug, atropine, and from these to infer certain of its therapeutic uses.

Belladonna, has been known for centuries. "As in the case of so many other medicinal plants, it was at first only regarded as a poison; it was afterwards much used as a drug, but came into disrepute in the period of reaction against all medicinal remedies. Later, its action in the form of atropine sulphate, was scientifically studied by experiments on men and animals."[1] Thus it was shown by J. F. Gmelin[2] in 1776, that rabbits were somewhat immune to the drug.

Atropine has been termed by Binz[3] "the most powerful of all internal stimulants," and this stimulating action is the one which I should like to emphasize here.

If a dose of $^1/_{50}$ grain of atropine sulphate be administered hypodermically to a small dog, within thirty seconds a marked effect is produced; the pulse increases in rapidity, the blood pressure rises rapidly, and the respiration is somewhat hastened and becomes more vigorous. The animal, unless deeply anæsthetised, tends to struggle. If in an animal thus placed under the influence of atropine, the vagi nerves be cut, no effect is produced on the pulse or blood pressure. If the distal end of one of the cut vagi be stimulated, still no alteration in the blood-pressure tracing occurs. Evidently the vagi are paralysed by the drug, and, in fact, the effects of atropine on the heart closely resemble those produced by section of both vagi.

But besides this, Luchsinger[4] has shown that, in addition to removing the drag of the vagi, the drug directly stimulates the heart. Whether this stimulation be through the augmentor nerves, as believed by Binz, or by a direct action on the cardiac muscle, or, indeed, indirectly by raising the blood pressure and thus calling on the heart to do more work, is not, I think, settled; but the fact if proved is an important one, that atropine not only removes the depressing action of the vagi, but also induces a further increase in the heart's action.

In our experiments on this special point, two in number, the heart's action was not increased in speed by atropine after section of the vagi, in fact was somewhat slowed, but the blood-pressure rose further, which is after all the most important thing.

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Experiment:—A dog weighing 30 pounds had both vagi divided, being, of course, anæsthetised. Three minutes later the pulse was 99, respiration was 18, and the blood-pressure registered 90 mm. Three one-hundredths of a grain of atropine sulphate was given hypodermically, and seven minutes later, when fully under the influence of the drug—as proved by the negative result obtained from stimulating the distal end of the vagus—the pulse was 88, the respirations 17, and yet the pressure was the same as before. Five minutes later after another similar dose of atropine the pulse was 96, the respirations were 27, and the pressure had risen 10 mm.

This experiment shows that atropine raises the blood-pressure more than by merely paralysing the vagi. This is accomplished partly by stimulating the heart, as already mentioned, and partly by vasomotor excitation.[5]

A curious point came out in our experiments which, as far as I can find, has not been previously noted. If in a dog under atropine one vagus be cut and the distal end be stimulated, no effect is produced on the blood-pressure tracing—this is what we would expect and shows that the terminations of the vagi in the heart are already paralysed. If the *central* end be now stimulated with the same strength of current, then a fall in blood-pressure occurs with slowing of the pulse. (Tracing II.) Evidently there is an inhibition of the heart down through the intact vagus, which one would have expected to be also paralysed. How this occurs it is difficult to explain, and I merely mention it in passing, and may say that it was a constant phenomenon in all the three dogs in which it was tried.

So far, we have seen that atropine stimulates the heart and blood vessels and paralyses the cardiac ends of the vagi nerves, and thus the blood-pressure is markedly raised. It also stimulates the respiration, as shown in the experiment given, when this rose from 17 to 27 per minute and became also more ample.

If, however, a poisonous dose be given then, as so often happens with stimulating drugs, the opposite effects occur—the heart slows, the pressure falls with dilatation of the blood vessels, and the animal dies from circulatory failure. With such large doses we are not now concerned, but rather with the action of the drug in medicinal quantities.

As regards the dosage in man, the British Pharmacopœia fixes it at $^1|_{200}$ to $^1|_{100}$ grain of the atropine sulphate by the mouth, and a little less hypodermically. This is low; and Binz[6] gives the maximum amount to be given three times daily at $^1|_{66}$ grain. Dr. Witherstine, in Sajous' Annual, states that "the usual dose of it internally, is from $^1|_{120}$ to $^1|_{60}$ grain, and the maximum single dose is $^1|_{20}$." This last amount

seems very large, unless, indeed, as an antidote to morphia or muscarin, especially as further on Dr. Witherstine graphically describes very unpleasant symptoms as arising from $^1/_{48}$ grain. One-half of a grain has proven fatal,[7] but three grains has been recovered from.[8]

Certain animals of a herbivorous nature, *e.g.*, rabbits and horses, are well nigh immune to atropine. Thus Calmus[9] found that it took 15 grains to kill a rabbit. Carnivora, on the other hand, are very susceptible to the drug. As men's natures vary, some resembling the herbivora and others the carnivora, so we would expect to find a large amount of idiosyncrasy towards atropine, and such appears to be the case. How otherwise can we explain Lepine's[10] statement that "more deaths have followed medicinal doses of atropine than of any other drug?"

It would be a useful rule never to give more than $^1/_{100}$ grain of atropine sulphate at one dose, except in emergencies. When emergencies occur, then we are justified in taking risks.

Enormous doses are given sometimes in morphia poisoning. Bartholow[11] recommends $^1/_{20}$ grain for every grain of morphia taken, and other authorities advise as much as ½ grain of the sulphate to be repeated if necessary in two hours, in this emergency.

The stimulating action of atropine, when given within safe limits, suggests many possible uses of the drug. Theoretically it seems likely to prove very valuable in cases of syncope, collapse, and sudden cardiac failure, in all of which there is a great fall of blood pressure, and practically it has been so used with success. Thus Lauder Brunton mentions "a case in which a child was collapsed and apparently dying. A subcutaneous injection of atropine revived her for a time. This was followed by relapse; but another injection was administered with good results and the child recovered." It would naturally be contra-indicated in collapse from hæmorrhage, unless the bleeding point could be secured.

Its more prolonged use in threatened cardiac failure has been chiefly tried in pneumonia, and I have frequently thought that benefit accrued from its employment over several days in cases of catarrhal pneumonia in children. Some writers have gone so far as to consider it almost a specific in this affection, but such a belief would probably lead to disappointment.

E. Müller[14] has shown that clinically the effect of atropine in hastening the heart's action decreases with advancing age and is more or less wanting in those cases where the heart has, from valvular disease or other causes, had extra strain thrown upon it for some time. Hence the drug would be of little or no use in breaking down of compensation of the heart.

As a means of averting danger in the induction of or during anæsthesia from chloroform, atropine has long been recommended, and many anæsthetists regularly give an injection of it alone, or with morphia, before commencing. Kunkel condemns this as causing delay in the awakening of the patient after the anæsthesia, but this seems to be a trifling drawback, if in any way it increases the safety of the administration. The Glasgow Chloroform Commission found that atropine was of benefit in chloroform anæsthesia, but, on the other hand, the Hyderabad Commission came to the opposite conclusion, and in a discussion which ensued between members of the two factions, Surgeon-Major Laurie[12] wrote, "If the Glasgow Commission regard the effects of atropine as beneficial, they must intend to convey that the inhibitory action of the vagus is a danger in chloroform administration, when atropine is not used, *i.e.*, that the normal action of a healthy nerve is dangerous to life." This argument is fraught with fallacies. In the first place, it assumes that the *only* way that atropine can affect the organism is by paralysing the vagus. This we have seen to be wrong. Again, it does not at all follow that, because the normal constant gentle inhibiting action of the vagus is harmless, therefore the abnormal stimulation of that nerve by an irritating body like chloroform may not be dangerous. In fact, it is generally admitted that some cases of sudden death, apart from anæsthesia, are due to too violent action of the vagus. Whatever the theory be, we found that ten dogs who were under the influence of atropine (in three cases combined with morphia), were very decidedly more difficult to kill with chloroform than animals not so treated. In my opinion, a small dose of atropine, say $^{1}/_{150}$ grain of the sulphate, hypodermically administered before the induction of anæsthesia from chloroform is a decided safeguard.

Lastly, atropine may be used as an emergency remedy when danger *has* occurred during chloroform administration. I have never had occasion to use it thus in practice, but in animals the effect is marked. For example, a fox terrier was given chloroform on a towel. He struggled and then rather suddenly the respiration became shallow and ceased. Artificial respiration was used without success; the tongue was forcibly drawn out and seen to be deeply cyanosed, and the heart could not be heard on auscultation. One-fiftieth of a grain of atropine sulphate was given hypodermically and the swelling rubbed until it disappeared, and the artificial respiration was kept up. About a minute later the heart was felt to be beating rapidly. Artificial respiration was discontinued, and soon natural breathing commenced in a rapid shallow manner and the animal recovered. Exactly the same thing occurred in another dog. Both animals seemed dead when the drug was given, and

probably would have really died had it been withheld. Here however, the danger of the *post hoc ergo propter hoc* fallacy must be borne in mind. Tracing I. shows recovery from chloroform poisoning apparently hastened by atropine.

It is only fair to add that Professor Wood[13] stated in an address delivered before the International Medical Congress at Berlin, in 1890, that in experimenting with various drugs on dogs poisoned with chloroform, "the results with atropine were almost negative. Ten cc. of a 2 per cent. solution of atropine sulphate altered the pulse rate, but had no apparent effect upon the pressure or respiration, and in no wise prevented final cardiac arrest." Ten cc. of a 2 per cent. solution, however, is such an enormous dose (equalling as it does about 3 grains of atropine) that he might well have got negative results, when a less amount would have produced the opposite effect.

In conclusion, I would urge the more general use of atropine in those cases of failure of the circulation, from whatever cause, where "the most powerful of all stimulants" is indicated.

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9. Ringer, "Handbook of Therapeutics," p. 383.
10. "Sajous' Annual," Vol. I., p. 526.
11. Murrell's "Poisons," p. 156.
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14. Uber die Wirkung des Atropin auf das gesunde und kranke neuschliche Herz.

TRACINGS FROM CAROTID ARTERY.

Recovery hastened by atropine given at A. Central end then stimulated at B. Pressure fell, pulse slowed and respiratory curve disappeared. Stimulus removed at C.

TRACING I. Dog recovering from chloroform poisoning. Distal end stimulated at A with negative effect.

TRACING II. Dog under atropine. Left vagus divided.

SOME EXPERIENCES IN THE METHODS OF TREATING HERNIA BY OPERATION.*

BY

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It is now nearly twenty years since surgeons began to operate for the cure of hernia by the open method. Previously radical cures had been attempted in various ways, such as Wützer's and Wood's method by subcutaneous closure of the ring, and Spanton's method by invaginating the tissues into the ring after reduction of the hernia, and fixing them there. Both these methods required great skill and the results were not always the most favorable—in fact they never became popular, and outside the practice of the originators, were rarely employed. Other methods, by injection into the ring of certain substances such as solution of oak bark, etc., in the hope of causing sufficient inflammatory action to close the rings, had a certain reputation in the hands of a few men. In small herniæ the method was fairly successful. Most of these proceedings were secret and practiced by members of the profession who were not very far removed from charlatans.

With the introduction of antiseptics the subcutaneous method of treating surgical affections gradually became obsolete and the open method gained more and more favor every year. This change was slow, for old ideas die hard, but the "principle of getting in and finding out" gained ground steadily—Marcy of Boston, Banks of Liverpool, and Volkmann of Halle, began to operate by the open method in the early eighties. First, an incision was made over the tumour, next the sac was excised, with or without bringing together the pillars of the ring. Soon after, more complicated methods were introduced, and finally, no one considered himself a surgeon unless he had invented a new operation, or a modification of an old one, for the radical cure or hernia. Everybody now rushed into operative measures for the cure of hernia and surgeons vied with each other as to the number of cases operated on and cures effected. Statistics of hundreds of cases were published and with few failures. Soon, however, there was somewhat of a reaction, it was found that after a time the so-called cures were not cures at all and relapses were frequently reported by rival operators.

Surgeons now turned their attention to improving methods of technique. It was found that sutures, months after being introduced, fre-

* Read before the Canadian Medical Association, Ottawa, September, 1900.

quently came away; that sinuses often remained at the site of the drainage tube and that infection frequently got in by this channel. I remember one huge inguinal hernia I operated on about this time, had a sinus for over a year, which did not close until all the silk sutures came away. This case was a remarkable one and I think was published —the hernia was so large that the man could not put on his trousers. In operating I had the greatest difficulty in replacing the intestines in a cavity to which they had been strangers for years and it was only by the inversion of the patient this could be accomplished, after their return the abdomen was as tense as a drum. In this case the testicle of the affected side was removed and the conjoined tendon sutured to Poupart's ligament. Although a sinus persisted for so long, the man had a perfect cure and has worked hard at his trade (that of a blacksmith) ever since.

The methods of operation, as I said before, are almost as numerous as surgeons, certain general principles however underlie all operations—first, the necessity for excision or obliteration of the sac—second, closure of the canal—and third, union by first intention. Some also hold that an alteration in the direction of the canal is necessary.

On this side of the Atlantic Bassini's operation, or some modification of it, is the favorite. In children almost any operation will do, and a failure to cure is rarely seen. I have operated in many ways—first, isolating the sac, excising it, suturing the ring after the Banks-Czerny method. I have also tried Kocher's method of transplanting the sac, Ball's method of twisting it, Macewen's method of tucking it up, and many others.

For some years I have performed the radical cure of hernia by Bassini's method and have not regretted it. However, everything has not always been satisfactory, and although, to read about the operations now performed, one would imagine no complications ever occurred, still, in visiting the various hospitals in the States or abroad, these wonderful results are not always seen. It is not uncommon to see a little pus, some high temperature, or a sinus.* I might now mention some of the mishaps which have occurred to me in some of my cases of hernia treated by operation :

I have found that by cutting the muscular part of the internal oblique and transversalis (that is the outer arched border), hæmorrhage frequently occurred during the vomiting from the anæsthetic and a little hematoma formed there which occasionally suppurated and sometimes a slough followed. Again, at the site of the drainage tube a sinus

* The frequent occurrence of sinuses after operation induced McBurney to advocato an operation by open incision which he afterwards abandoned.

persisted and lasted till some sutures came away. Again, although the wound healed by first intention, after months a little abscess would appear, break, and leave a sinus through which would exude a suture. All these little accidents were annoying, and in speaking to various surgeons I find it has been their experience also. I endeavored to avoid such untoward results by improved technique.

I have used all kinds of sutures; silk, silkworm gut, kangaroo tendon and aseptic and antiseptic catgut, etc., and have come to the conclusion that absorbable ones are the best and if the absorbable suture is an intiseptic one, it is to be preferred. The belief that a silk or wire suture is better when there is much tension and that it is necessary to keep the parts together indefinitely, is almost universal, yet, I dare venture to say that no ligature will hold parts together more than three or four weeks if there is tension. In such cases the sutures invariably cut themselves out and lie loose in the tissues if composed of unabsorbable material—hence a suture that will last about three weeks is all that is wanted.

For some two years now I have used nothing but strong chromicized antiseptic gut. Antiseptic catgut is preferable because we can never altogether be sure of perfect asepsis and a moderate amount of sepsis will be overcome by an antiseptic ligature where a simply aseptic one would break down.

I never wash out the wound, for water in the loose cellular tissue distends it and makes it less resisting to germs. It is better also to dissect out the sac with a knife than to tear it out with the fingers. I also now never cut the internal oblique and transversalis in transplanting the cord, but merely pull the edges aside. The ring is closed by uniting the conjoined tendon and edge of the rectus muscle with Poupart's ligament by two or three interrupted chromicized catgut sutures.

It is very important that the sutures should not be too tight or too close together, a neglect of these precautions may lead to sloughing due to the cutting off of the blood supply. The external oblique is united over the cord by a continuous catgut suture and the skin wound is either brought together by a continuous subcutaneous or interrupted suture of horsehair. I never now use a drain and rarely apply any other dressing than iodoform paint and collodion.

I should have mentioned before that I now make the incision in the skin well above Poupart's ligament so that after suturing the conjoined tendon to Poupart's ligament, I still have a sufficient amount of external abdominal oblique muscle left to suture to its upper portion. I also make the incision farther away from the pubes than formerly as these parts, not being covered with hair, are more easily sterilized and there is less fat there.

In all my cases I insist on rest in bed for three weeks after the operation and more if the patient can afford it. During the past summer I have had two cases of cœcal hernia with the appendix in the sac—in both cases the appendix was removed and in both cases there had been a history of previous attacks of appendicitis, evidence of disease of the appendix was present in each case.

For the last two years I have used rubber gloves in all operations on the abdomen and others where strict asepsis was essential, and I have been well satisfied. I think my results have been better in all operations since I have used them, I have had fewer stitch abscesses and altogether have operated with greater confidence.

During the last two years also I have not had a case of suppuration nor has a sinus resulted from the operation for radical cure. Among the cases operated on are included several severe umbilical herniæ. I do not mean to say that there will not be recurrence in some of the cases, but I do say the chance of relapse is much less when the wound heals by first intention.

The end results I have not given, nor have I tabulated my cases in this paper. I only want to give you the result of my experience of the methods of operating and the various sutures used in closing the ring. The cases that I have traced are as well to-day as possible and I have not now the disagreeable duty of treating a sinus for months which won't heal until the sinuses are discharged.

The mortality from the operation is practically nil in non-strangulated cases. Formerly, when all kinds of cases were operated on, deaths occurred in about five per cent. in the hands of able surgeons. At first, operations in children were not advised, except when strangulated, now these are our most successful cases.

EMPYEMA.*

A STUDY OF THIRTY CASES FROM CLINICAL AND BACTERIOLOGICAL STANDPOINTS.

BY

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Concerning the mode of onset of the illness in these cases, but little is noted that may be regarded as extraordinary. In those that have been classified under the metapneumonic group, an onset, best described as "pneumonic," prevailed; in some, a crisis occurred, in others none is recorded. (It should be noted at this point that not a few of these patients were not brought to the hospital until many days after the period of crisis, if such there were, had passed, and thus this part of the history is lacking).

A gradual onset was noted in four cases, three of which were those of tuberculous patients. Pleurisy, with a clear sero-fibrinous effusion, was demonstrated in another case. Severe, recurrent chills with peri-urethral abscess, marked the onset of a protracted case. Two are supposed to have followed typhoid fever, yet there is but scant support forthcoming for this supposition. The abdomen was the seat of pain so far as the complaints of four children indicated. An onset with a convulsion is not recorded.

In a general hospital, where patients with the infectious diseases were not received, one would scarcely expect to find that more than 45 per cent. of any one class of cases under treatment, were among children; especially would this be rather a surprise where the proportion of beds for children is to those for adults as 1 to 8; yet this is about the proportion we find in our hospital experience. Of the thirty patients herein reported, thirteen were under twelve years of age. The youngest of the series was eight and one-half months, the eldest sixty-six years.

Under 1 year	1
From 1 to 5 years	3
" 5 to 12 years	10
" 12 to 20 years	2
" 20 to 30 years	7
Over 30	7

There were sixteen males and fourteen females.

* Read before the Canadian Medical Association, Ottawa, September, 1900.

The right side was involved in eleven cases; the left side in eighteen, while a double empyema was observed but once. Although no reference is made to this subject in text-books, as Dr. Francis Huber said over ten years ago, he collected from the literature about one dozen cases, and several more have been recorded since. Many of such cases have been cured, yet the one in this series terminated fatally.

Two of our patients showed scars of a former operation for empyema over the side again acutely involved. A brief report of these cases may be of interest :—

A. O. (2577), m., æt. 10 years, became suddenly ill on Jan., 25th, with sharp pain in the left side, chill, flushes, cough and dyspnœa; fever 100° to 102°, pulse 100 to 104, respirations 36 to 40. Within a few days there were signs of fluid in his chest and the exploring needle confirmed these signs. His mother gave a history of his having pneumonia at the age of seven, and that during this illness his side was opened for pus, and the scar upon the left side confirmed that statement.

He was again operated upon along the line of the old incision, and considerable pus was evacuated but no fibrinous masses.

The recovery of this case was long and tedious, a sinus presenting after 118 days in the hospital. The second report of empyema concerns:

E. B., m. æt. 9 years, who fell ill on Sept. 20th, 1896, with chill, severe pain in right side, shortness of breath and headache, but signs of pneumonia did not develop for some ten days. After this the pain in the right axilla became more severe, a friction rub was heard, while blowing breathing and rusty sputa were the chief signs of pneumonia. In a few days the blowing breathing had disappeared and the patient's condition was constantly becoming worse. The right side, always flatter than the left, since his former operation at the age of three years, now began to show a small area of bulging over the lower ribs anteriorly, and later, œdema developed just about the scar from the former surgical wound.

He was operated upon in the usual way and made a good recovery.

Well recognised among clinicians and often referred to in books, is that form of empyema in which the cavity, once evacuated, may refill, yet this form of recurrent empyema, so far as the writer knows, is very rarely described.

Two cases in tuberculous patients, began with pneumothorax. Gas in variable quantity was noted at time of aspiration or resection in three other cases which lack the usual history of the onset of pneumothorax, as well as any further evidence of its presence.

Streptococci and staphylococci were found alone in cultures from the effusions of these cases, in two of which the odour of the pus is reported as offensive. There is no evidence to show that a communication with a bronchus existed.

The Season:—Winter	11	Summer	9
Spring	7	September	3

The Diagnosis:—While the history and physical signs pointed in

most instances to the presence of pus in the pleura, an exploratory aspiration was made in twenty-five cases. In one of the patients empyema was indicated by œdema and redness about a prominent area at one part of a dull half of the thorax. Four patients were admitted for conditions as follows :

1. (774) Discharging sinus having been operated on some months before.

2. (1150) Discharging sinus along the track of the aspirating needle used some weeks before.

3. (1526) Persistent sinus from operation two years previously.

4. (4348) Persistent sinus following aspiration six months before.

It is the teaching of all clinicians that when there is the least doubt about the quality of fluid in the chest, or even about the presence of fluid that one should aspirate. But little, if any, harm can come of this operation, and the diagnosis is made thereby very sure. Empyema cannot be diagnosed in season without resort to this means.

The Prognosis:—The experience derived from these cases would lead one to say that very much depends upon the *nature of the infection.* This we think should be first as we believe it is, of the greatest importance. In the second place, *the readiness or otherwise with which the compressed or retracted lung returns to fill the cavity, marks the difference between a case of favorable and rapid progress to complete healing, and a protracted one, ending possibly in extensive rib resection with deformity.*

The prognosis of purulent effusion in a tuberculous patient, usually a mixed infection, whether with or without pneumothorax, is very bad; it has been in these cases but a question of time, the discharge never ceasing. A pneumococcic infection, while comparatively benign, must be regarded in the light of the variability or the virulence of the micro-organism. Osw. Vierordt has recently reported four cases of pneumococcic empyema which had a fatal termination, in two of which peritonitis due to the same organism was present.

While the first condition of prognosis relates to the patient's life, the second condition has to do more with health of the subject and the length of time of his return thereto. Of those patients who lived and were under observation until healing was complete, that patient of whom it is recorded that "the lung expanded with a fit of coughing just as the tube was being inserted" at the time of operation, made the shortest recovery. She went out of the hospital in twenty days from date of operation, healed. Where the lung was found far from the wall of the thorax and adherent, recovery was slow, forty, fifty, sixty, seventy, and

in one case one hundred and twenty days, were spent before healing was satisfactory.

TABLE SHOWING DURATION OF ILLNESS IN RELATION TO OPERATION.

(Not including those dead or who went out before recovery.)

Hist. No.	No. of days before operation.	Date operation.	No. days after Operation.	
892	20	Aug. 10th, 1895.	29	
1162	48	Jan. 18th, 1896.	22	
1556	46	July 30th, 1896.	72	
1557	28	.....	52	
1691	20	Oct. 25th, 1896.	47	Recurrent empyema.
2084	21	May 27th, 1897.	120	Pregnant, large pleur. cav., healed.
2156	14-16	June, 1897.	225	Sinus slow in closing.
2265	20	Aug. 30th, 1897.	20	
2577	10	Feb., 1898.	118	Recurrent empyema.
3475	29	April 13th, 1895.	21	Went home with tube still in.
3575	26	May 25th, 1899.	40	
3602	37	June 8th, 1899.	34	
3707	28	July 17th, 1899.	30	
4158	15	Jan. 2nd, 1900.	70	Small sinus soon closed.
4339	22	Feb. 19th, 1900.	71	Small sinus.
4348	539	Feb. 26th, 1900.	77	Empyema necessitating extensive
4412	37	Mar. 20th, 1900.	74	[resection
4661	20	June 15th, 1900.	48	

The Treatment:—There is no case of empyema recorded in this series in which cure followed a simple aspiration. It is interesting to note, however, that in one patient (1150) the pleura was aspirated, more for a diagnosis than otherwise, after the patient had been ill for about three months. The wound made by the exploring needle did not close. Pus continued to discharge through this track for about five weeks in such quantities that the dressing needed to be changed from four to five times daily. Shortly after the cessation of this flow the cough became worse and pus was expectorated in large (cupful) quantities. When admitted to the hospital the dull area on the right side was explored under ether, with small and large needles, in the eighth and tenth spaces, without finding pus. She made an uneventful recovery.

In another patient (3475) in whose history, personal and family, there appears no evidence of tuberculosis, and in whose pleural fluid pneumococci and also streptococci were found, the aspiration method had a fair trial. He was aspirated on March 26th, April 6th and 11th, and on April 13th he was operated on, a portion of the 9th rib being resected; at time of operation, the lung could not be felt. He made a rather protracted recovery.

Having but little faith in the curative effect of but simple aspiration, the pleural effusion in these cases, not admitted for closure of sinuses, etc., was evacuated by rib resection and opening the sac.

In fourteen cases a portion of the 8th rib was excised, usually at the

lower scapular angle or a little anterior thereto; in eight cases the 9th rib; in one the 7th and 8th; in one the 8th and 9th; and in one the 9th and 10th. In two cases no rib was excised, as in one of these the pus pointed and was evacuated by incision only when the patient was *in extremis;* the other is (1150) already described. A rubber drainage tube was used with but two exceptions, when a silver tube was inserted. Washing out of the cavity was adopted a few times in one case only. It was a tuberculous case, originating as a pneumothorax, in which the odor was very offensive. No untoward effects followed this process.

A solution of cocaine was used in one case of rib resection; all other cases were operated on under general anæsthesia, induced by ether or chloroform.

Fatal Cases:—Four patients died in the hospital and a fifth died a few months after going home.* The percentage of deaths, then, in these cases, so far, may be put down as 16. Of these five, *two* were tuberculous, the sinus resulting from the operation never healed. The patients were the subjects of well marked phthisis. *One* was the victim of a double empyema due it would seem to a streptococcus infection, and *one*, an old patient aged 66 years, succumbed shortly after an incision was made into the pleural sac which contained foul smelling gas and pus. Then case of F. N., No. 3571, where appendicitis and peritonitis complicated the empyemic condition, completes the number.

Considering the gravity of those cases we think the results may be put down as very good indeed. Where a simple infection with the pneumococcus was found, no deaths are recorded.

1. (3632). C. A., æt. 66, m., was taken ill May 1st, 1899, with pain in lower part of right thorax. He remained at work till May 24th, when he took to bed. Dulness, diminished breathing and swelling from 7th rib downward on right side, were the chief signs made out; heart dulness could not be distinguished. June 15th, incision made over swelling near right costal margin, foul smelling gas escaped and limits of the cavity were not ascertained. A rubber drain was inserted when pus flowed on coughing only.

On 17th, 18th and 20th, attempts were made to localize the pus, punctures being made in 8th and 9th spaces but without result. Patient died 20th June, 1.45 p.m. (No note of bacteriological examination; post-mortem and cultures, not made.)

The clinical history in this case is obscure, the finding suggests rather a latent localised pyopneumothorax.

2. (3571). F. N., æt. 37. (See chief facts in this case under Bacteriology.)

3. (1855). A. L., æt. 29. In August, 1896, patient suffered from right sided pleurisy, and on Jan. 16th, 1897, complained of pain in left side, cough, shortness of

* Another patient died a few days after leaving the hospital. His was a tuberculous case.

breath, fever and sweating. Feb. 9th his right pleura was aspirated and one and a half quarts of pus were withdrawn. Feb. 6th, over a slightly bulging area and without anæsthesia, the 9th intercostal space was incised and a metal tube inserted; Feb. 15th tube removed and 1¼ inches of 9th rib excised in posterior axillary line to secure better drainage.

Patient succumbed June 4th. Cultures gave streptococci in pure growth. Post-mortem—Ulcerative Pulmonary Tuberculosis; Tubercular Ulceration of Epiglottis and Intestines; Adhesive Pleuritis of right side; Interstitial Myocarditis.

4. (4454). L. M., æt. 12, was taken ill about Jan. 25th, 1900, with what was regarded as pneumonia of left side. She was ill for four weeks, then she improved for a while. On March 24th it was found that there was tenderness and fulness below the left nipple, her general condition having recently failed.

April 4th, pus was demonstrated by aspirating needle; two days later resection of 8th rib below angle of scapula, gave exit to a large quantity of yellow pus. Some days later, however, the discharge lessened, and on this account it was decided to resect a portion of the 10th rib, thus opening the cavity at its lowest level, April 12th, and a tube was inserted. The patient's condition continued extremely bad; fever, restlessness and dyspnœa characterising it. She succumbed on April 19th to a double empyema. Bacteria, streptococci.

Post-mortem—Bilateral empyema, numerous pockets of pus; collapse of both lungs. Bronchitis. Some pulmonary interstitial changes.

When we review the tables showing the length of time required to complete the cure of these patients, one naturally asks, whether any better method than those adopted can be devised by which the retracted and adherent lung may be released and allowed to fill the pleural sac. We think *yet earlier* recognition of an empyema is the first step, then a prompt evacuation of the pus seems indicated. Theoretically, the use of the valvular drainage tube that keeps the pleura a closed sac, so far as atmospheric pressure is concerned, appears to one as a means of helping toward greater lung expansion. Nicholas Senn suggests aspirating the chest as a means of securing pulmonary expansion, a day or two before the operation which admits air. Can not something be done in these cases where adhesions are firm and the lung retracted? Perhaps Delorme's operation or some other new operation for breaking down the pleural adhesions and stripping the lung of its contracting fibrous covering, may give more satisfactory results.

The Bacteriology:—Jakowski states that every form of pleural inflammation is of bacterial origin, although one does not always succeed in demonstrating the bacteria in the exudate. Negative results in the examination of pleural effusions are frequent, and especially so in those of the serous of sero-fibrinous form. A. Fraenkel says, in summing up his article on the bacteriological examination of purulent pleural effusion, that when in such an exudate, the microbic examination of a large number of preparations is negative as well as the cultures, one may conclude that the condition in the highest probability is of tuberculous origin.

In our series of thirty cases, examinations of the pleural effusion were made in twenty-three with the following results :—

Micro-organisms.	Frequency.	Pure.	Mixed.
Streptococcus	7	4	3 : i. Staphylococci. ii. Pneumococci. iii. Tubercle Bac.
Diplococcus Pneumoniæ.	6	4	2 : i. Streptococci.
Staphylococcus	6	4	ii. B. Coli Com. et Staphylococci.
Bacillus Ramosus	1	1	2. Streptococci : Diplococci Pneum.
Bacillus Pyocyaneus	1	1	0
Tubercle Bacillus.....	1	.....	0
Bacillus Subtilis.....	1	1	1. Streptococci.
Sterile	4	.....	0

The two main features as shown by this table, which may be emphasized, are the comparative frequency of staphylococci and the rarity of the diplococcus pneumoniæ.

From the clinical history, one is clearly justified in including thirteen of these cases under the class of metapneumonic empyema, although the bacteriological findings do not correspond in every respect. The pleural effusion was examined in eleven instances and in but four was the diplococcus lanceolatus found alone, once it was found with staphylococci and the colon bacillus. In two cases streptococci were present; staphylococci were found in three cases, once alone and twice associated with the colon bacillus; two cultures proved sterile.

The following table presents at a glance the metapneumonic cases with those also in which the pneumococcus lanceolatus was found and where a history of pneumonia was not clear :—

Case Report No.	Age.	Month.	Cultures.	Results.
1526	9	Admitted for persistent sinus		2 years.
1691	9	Sept.	No cultures.	Cured.
1162	5	Dec.	Diplo. Lanceo.	Cured.
2084	20	May	Sterile.	Cured.
2090	8	April	Staphylococci.	Cured.
2265	2	Aug.	Staphylococci et B. Coli.	Cured.
2720	46	Jan.	Diplo. Lanceo.	Cured.
3707	8	July	Sterile.	Cured.
4339	6	Feby.	Strepto. Pyo.	Cured ; Small sinus.
4412	3	Jan.	Diplo. Lanceo.	Cured.
4454	12	Jan.	Streptococci.	Death ; double empyema.
4661	23	May	Diplo. Lanceo.	Cured.
3571	37	May	Diplo. Lanceo. B. Coli Com. Staphy. Aur. and Alb.	Death.
3475	22	March	Diplo. Lanceo. Streptococci.	Discharged ; tube in.

It will be seen from the table that but six cases gave evidence of the presence of the diplococcus lanceolatus, and thirteen are of the metapneumonic type ; clinically, we thus have a positive bacteriological re-

sult in only 45 per cent., supporting the view that the diplococcus pneumoniæ was active in producing the empyema.

This view is now well established ; the percentage in our cases however falling rather below that of other observers. It may be that as some would account for the sterile cases by the suggestion of the death of the organism of whatever form, so the same suggestion might have equal, if not more, force as applied to the diplococcus lanceolatus.

All cases of pneumococcus infection terminated favorably, with one exception. In this connection it may be well to review the chief points in the history of this case :—

F. N., æt. 27, was taken ill about the 1st of April, 1899, with general pains, thoracic and abdominal, associated with some diarrhœa. A few days later he had cough, blood tinged expectoration and definitely left sided thoracic (axillary) pain, aggravated by cough ; he had also some sweating at night.

On April 19th, over two weeks after the onset, he experienced a sharp pain in the right iliac region followed by tenderness and vomiting. The history thereafter until his admission is not recorded.

When admitted on May 22nd, the left chest was aspirated and pus containing the diplococcus lanceolatus was withdrawn ; the chest presented a bulging on the left of the 3rd, 4th, 5th and 7th intercostal spaces, with a faint trace of œdema at one part.

Under ether, the patient underwent a double operation for empyema and peritonitis. The appendix was gangrenous at the tip; there was an omental abscess and a considerable amount of pus in the lower part of the abdomen. The pus from the pleural cavity is described as thick with numerous fibrinous masses. The walls of the pleural sac could not be reached by the exploring finger. The pus from the peritoneum contained the bacterium coli ; that from the chest at time of operation is reported containing staphylococci.

The history of this case suggests a general infection manifest in general pains, diarrhœa, etc., and a primary localisation at least of that infection in the lungs, with bronchitis, pneumonia of what form we cannot say, and pleurisy of purulent type due to the diplococcus pneumoniæ. Upon this followed signs of peritonitis.

Concerning the results found in the bacteriological examinations made in these cases, it may be said that some doubt must remain as to the exact relationship which the bacteria bear to the production of pus. This applies especially to the forms of, staphylococci, the bacillus coli com. and the bacillus pyocyaneus, ramosus and subtilis.

We have in this series but three cases occurring in tuberculous patients, *i.e.*, patients in whom tuberculosis is undoubted. In one of these the cultures showed pure streptococcus growth, no tubercle bacilli were found in the pleural effusion. The others were the subjects of pneumothorax with shrunken and intimately adherent lung.

The examinations for tubercle bacilli were positive in one case on two occasions by two observers, while in the other there is no record of a test having been made. While it is rare to find tubercle bacilli in cases

of empyemata in tuberculous subjects, yet where a pneumothorax exists one can readily understand how much more likely one would be to secure a positive result in examinations for that organism. We may note in passing, too, that among these cases there is one which shows how an empyema in tuberculosis may originate in a pure streptococcus infection.

In the four cases of purulent pleurisy, staphylococci were found alone. In one of these one need not wish for a more typical history of lobar pneumonia than is to be found in this case. There was crisis on the 9th day and after two or three days the temperature rose, and for five weeks ran a septic course. It is recorded that in the act of exploring, air escaped; yet at the time of resection of the rib some days later no evidence of pneumothorax was detected.

The rôle played by this micro-organism in the cause of empyema is yet very uncertain. Fowler considers it as still doubtful whether it should be regarded as a causative agent, and Netter remarks upon the rarity of its being found alone. That it may render purulent a serous or sero-fibrinous fluid is admitted, and the recent cases recorded by Lop and Monteux confirm this teaching.

Many regard an infection with staphylococci as far more common in tuberculous patients. Yet in reviewing the histories of these patients so infected, but little if any evidence is forthcoming to show that these were tuberculous subjects.

The bacillus ramosus and the bacillus pyocyaneus were found in one case where some weeks before about eighty ounces of clear fluid had been withdrawn. In this case a sinus persisted and fluid discharged along the track of the exploratory needle.

The bacillus subtilis was found in one case. The patient's chest had been aspirated under very unfavourable circumstances to relieve the urgent dyspnœa some days before the rib was excised.

To Dr. James Bell and Dr. Garrow, under whose care these cases finally came, I am greatly indebted for the privilege of making this study, and also to the members of the Resident Medical Staff who have so kindly assisted in making the analysis of the reports.

QUARTERLY REPORT OF THE EYE AND EAR CLINIC OF THE ROYAL VICTORIA HOSPITAL, MONTREAL.

BY

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A Case of Primary Carcinoma of the Lachrymal Gland—Extirpation of the Growth by Kronlein's Operation.

James W., æt. 31, English-speaking native of Canada, came to the out-patient department of the hospital complaining of a bulging of the left eye.

For the past year the patient had felt indefinite "stitches" in the outer and upper part of the orbit, and during a period of ten weeks prior to his coming to the clinic he noticed a gradually increasing prominence of the left eye accompanied by failure of vision of that side. During the last mentioned period the patient said that the parts to the outer and upper side of the eye had become slightly tender to the touch, but he had never experienced any definite pain in connection with the growth. He had been living a generally intemperate life for some years past, and on two occasions during drinking bouts had received blows upon the left eye. There was specific history.

The patient was a fairly well nourished man of medium height, exhibiting a considerable degree of anæmia as shown by pallor of the face as well as lips and conjunctivæ. The right eye was normal in every respect, R.V. $= {}^{6}|_{6} + 0.5\ {}^{6}|_{6}$.

The changes in the left eye, as will be seen in the photograph, were very marked. There was increased fulness of both the upper and lower lids with obliteration of the palpebral folds. The left upper lid was on a lower level than the right but the palpebral fissure was fully 3 mm. wider on the left than the right side; the movements of the lids were normal. The veins of the conjunctiva were full and tortuous along the upper fornix, but this condition could only be seen when the lid was everted.

The most striking feature of the case was the very apparent exophthalmos. There was forward displacement of the globe to the extent of 15 mm. with little or no lateral deviation and the eyeball was at the same time pressed downwards about 5 mm. below its opposite fellow. The

movements of the globe were normal in every direction except outwards, where the excursion was 8-10 mm. less than on the right side.

On palpation one could feel below the outer third of the superior margin of the orbit, between it and the upper surface of the eyeball, a dense elastic mass with a rounded, slightly nodular margin. The tumour could be traced into the orbit for a short distance on either side. With the ophthalmoscope, increased fulness of the retinal veins was made out, but the fundus was otherwise normal. L.V. $= {}^{6}|_{36}$, not improved. The field of vision for white, red, and green, showed only

slight constriction for the first mentioned colour on the temporal side of the chart. T. n.

May 3rd, 1899. Tumour removed by Krönlein's method. As the details of this operation are still not generally known, we insert a translation of the author's own words regarding the steps to be followed in its performance, as was closely done in this instance.

1. *Skin Incision:* The incision begins in the temporal region at the point where the *linea semicircularis* of the frontal bone is distinctly felt through the skin, *i.e.* about 1 cm. above the *margo supraorbitalis*, and

extends downward along the outer orbital margin as a slight groove, with the convexity forwards, to the level of the upper margin of the zygomatic process of the malar bone, where it turns backwards and ends in the middle of this structure.

The skin incision is then carried down to the bone along the outer orbital margin, and through this periosteal incision the whole of the periosteum is separated from the lateral orbital wall by means of a raspatory, a proceeding easy of accomplishment. The point of the raspatory is then passed downwards to the inferior orbital fissure in order to fix the spot which forms the point of convergence of the presently described bony sections.

II. *Bony Incisions :* The osteoplastic resection shall include the whole of the outer orbital margin (process. zygomaticus oss. front. and process. frontalis oss. zygomatic) and that part of the outer orbital wall which lies between this limit and the inferior orbital fissure (pars orbitalis oss. zygomatici and anterior part of the ala temporalis oss. sphenoid.). The piece of bone to be temporarily removed has therefore the shape of a wedge whose base is formed by the outer orbital margin (process. zygom. oss. front. and process. front. oss. zyg.), and whose apex ends in the anterior part of the inferior orbital fissure.

The bony incisions are best made with a sharp chisel without any further preparation and especially without loosening the natural connections to which, together with the skin flaps, falls the work of nourishing the separated piece of bone during the early period of healing. First of all the external angular process of the frontal bone is chiselled transversely through somewhat above the distinctly visible and palpable *sutura zygomatica-frontalis* and the bony incision continued forward in a direct oblique line through the lateral orbital wall to the raspatory in the inferior orbital foramen. Then follows the horizontal chiselling through of the *processus frontalis* of the malar bone close to its base and likewise carried down to the fissure.

When this has been done the bony piece thus made free, together with the skin fasciæ and muscle flaps of the temporal region, can be so far turned outwards that the entrance to the orbit in its lateral part appears free. The operation is usually simply and quickly performed ; after successful removal of the tumour the skin and soft parts are replaced and held in position by sutures and healing follows without difficulties or disfigurement."

The operation in the present instance varied little from the above description and was performed without any serious difficulty. On turning back the bony wedge the tumour presented beautifully in the wound and was removed with ease.

The patient made an uninterrupted recovery and was discharged May 17th, *i.e.* two weeks after the operation. Although diligent search was made for the patient recently, we were unable to find his whereabouts and cannot consequently state his present condition. The last note on his out-patient card, dated May 26th, 1899, was as follows :— "Wound entirely healed leaving a thin V-shaped cicatrix at the outer angle of the orbit ; proptosis now very trifling but there remains slight convergent strabismus (40°) and on movement outwards the left eye approaches only to within 1 cm. of the outer canthus and the patient sees double to the left. Fundus normal, L.V. = $^{6}/_{24}$ (2), not improved. Some loose œdema of the conjunctiva downwards and outwards."

The extirpated growth represented the enlarged lachrymal gland and was everywhere covered by a thin but firm capsule. The mass measured 35 mm. antero-posteriorly, by 25 mm. from above downwards, and was thicker at the anterior end (20 mm.) than at the posterior end (5-8 mm.), as the tumour tapered off from before backwards. The anterior surface was slightly concave, the external decidedly convex. The tumour had an uneven, in places almost nodular, surface and was of moderately dense consistence.

Microscopical examination showed that the normal appearance of the gland was everywhere obliterated by an overgrowth of typical epithelial cells which tended especially to mass together in certain areas. The septa of the gland were little changed and there was no tendency to any alveolar arrangement.

The growth consisted of a marked atypical development of characteristic epithelial cells and was therefore regarded as *carcinomatous* in character. Dr. Nicholls, Assistant Pathologist to the hospital, kindly examined the growth and arrived independently at the same conclusion.

Systematic Examination of the Excised Eyeball.

(From the Pathological Laboratory of the Royal Victoria Hospital.)

Case IV.—Glaucoma Absolutum—Extensive Subchoroidal Hæmorrhage Following Iridectomy.

The patient, a female æt. 55, had an attack of glaucoma in the right eye in September and November of 1898, and again in January, 1899. The last seizure robbed the patient completely of the sight of that eye.

On examination, the media were found to be entirely clear and the optic disc of a peculiar reddish color and seemed to be moderately cupped, T. + 3.

June 24th, 1899, iridectomy was performed in the forlorn hope of preserving the globe *in situ*. Immediately after the iris tissue had been snipped off the corneal wound gaped and the lens presented through the

coloboma. The wound was now enlarged and the lens removed with a vectis, vitreus escaping during the procedure. A quarter of an hour after the application of the pad and bandage the patient complained of severe pain, and intraocular hæmorrhage having been diagnosed, the globe was excised.

Examination of the eyeball showed the cornea flattened and wrinkled and a large mass of dark blood-clot protruding from the gaping wound at the upper corneo-scleral junction. On section, one sees again the gaping scleral wound and through this protrudes a rounded knuckle of choroid pushed forward by a large hæmorrhage, which everywhere extensively separates the vascular from the sclerotic coat of the eye. Within the choroid the retina, shrunken and thrown into numerous folds, is attached only at the optic disc and forwards in part at the orra serrata. In the anterior part of the subretinal space is a small amount of extravasated blood which has apparently come from the ciliary process.

Case V.—*Longstanding Wound of the Cornea, Iris and Lens—Chronic Uveo-Retinitis—Secondary Glaucoma.*

Edward B., æt. 32, cut his left eye with a jack knife when he was 9 years old. The organ was inflamed and painful for two or three months but eventually quieted down and caused no inconvenience whatever until one month previous to his admission, when it became for a second time terribly and persistently painful.

Examination showed very marked pericorneal and conjunctival injection, and a distinct corneal cicatrix about $\frac{1}{2}$ mm. broad, which runs in a vertical direction through the inner third of the cornea and extends from the junction of the upper and middle thirds of this structure at least 1 mm. beyond the corneo-scleral margin. The pupil is almost obliterated, but the iris, the tissue of which is visibly atrophied, is drawn inwards towards the middle of the cicatrix where it adheres. The anterior chamber has become obliterated. V. = no pl., T. + 2.

Section shows the cornea of normal thickness but marked by a prism-shaped cicatrix corresponding to the scar noted. The iris is most firmly applied to the whole of the posterior surface of the cornea, but a portion of it, stroma or pigment epithelium, stretches between the cicatrix and the inner anterior surface of the lens. The ciliary body and ciliary processes are visibly atrophied but hold in a loose manner the opaque and irregularly shrunken lens. The retina as a whole is greatly thickened and marked by the presence of irregular masses of organized tissue, greyish-white in color. This is especially laid down along the retinal vessels at the *equator bulbi* in the upper outer quadrant of the globe and along the whole extent of the terminations of the ciliary processes in the upper half of the eye.

From the last mentioned deposit of tissue a filmy vascularised curtain descends close behind the posterior surface of the lens, to which it sends fine processes, and is loosely attached in the lower half of its extent. The retina is very extensively detached, especially in the lower half of the globe, where it is adherent only at the optic disc and *orra serrata*. The subretinal space is completely filled with a gelatin-like substance of a reddish amber color.

Microscopical examination : The corpuscular elements of the cornea are everywhere greatly increased except at the position of the cicatrix, where the stroma is paler and clearer from the presence of scar-tissue. Very little of the iris proper is seen, because the retinal pigment layer is so greatly developed that the thin and atrophic stroma is almost completely hidden from view.

The newly formed curtain behind the lens has the appearance and staining properties of connective tissue ; it is continuous with and has been apparently derived from the mesoblastic elements of the retina, which it has caused to be detached from cicatricial contraction upon its peripheral limits. On either side the retina is folded upon itself for a short distance and the apices of the folds are the points of attachment of the post lental curtain.

The retina otherwise shows changes of long standing atrophy, but is also the seat of numerous interstitial hæmorrhages of varying size. The subretinal exudate is composed of extravasated blood in which numerous leucocytes are undergoing metamorphosis into pigment cells. From the membrane of Bruch are developed numerous and particularly large hyaline excrescences (Drusen.).

Case VI.—Chronic Irido-Cyclitis—Secondary Glaucoma—Sarcoma of the Choroid.

The patient, a female, æt. 44, had noticed failure of vision of the left eye for the past three years, with pain and redness in the organ for the last six months ; at first the pain was severe, but during the last two months her suffering has been less acute.

The left eye showed slight divergence and intense pericorneal injection with large tortuous conjunctival vessels running in at intervals to the limpus. The cornea is hazy and stippled and Descemet's membrane studded with old cyclitic deposits of a reddish brown color. A few deep, interstitial vessels are seen running in from the periphery of the cornea. The anterior chamber is shallow ; the pupil irregular and totally bound down to the apparently opaque lens ; there is marked ectropion of the retinal pigment layer.

Along the periphery of the inner half of the iris and corresponding to

the greater circular artery, is an elevated ridge of iris tissue which almost touches the posterior surface of the cornea. The ascent of this prominence from the direction angle of the anterior chamber is gradual, but on the side towards the pupil it terminates precipitously. Its summit is covered for some distance by a fine vascular mesh work. V. = no pl., T. n., no fundus reflex.

Microscopical examination shows the conditions as above, but one sees also thinning, discoloration and moderate bulging of the sclerotic in the equatorial region outwards and upwards.

Section shows the anterior chamber filled with whitish lens-like substance which made its appearance during the hardening in formalin. Immediately in front of the iris is a thin rubbery layer of tissue continuous through the pupil, with an exudate of a similar consistence between the posterior surface of the iris and the anterior lens capsule, and in and about the posterior chamber.

Immediately in front of the entrance of the optic nerve and occupying about a third of the vitereous chamber is a large pigmented growth, springing apparently from the choroid coat. The retina on either side is extensively detached and pushed towards the posterior surface of the lens. The large, subretinal space on either side of the tumour is occupied by a reddish, jelly-like exudate. The optic nerve almost in its entirety had been left behind in the orbit. The sclerotic is much attenuated in the position of the staphyloma.

Microscopically, the picture is that of a sarcomatous growth of the choroid complicated by a most intense inflammation of the iris and ciliary body. The tumour is seen to spring clearly from the choroid, which is thickened and infiltrated by the sarcomatous cells for some distance on either side of the growth.

The sarcoma is composed for the most part of spindle-shaped cells which have a distinct fascicular, in places almost alveolar, arrangement. Numerous pigment accumulations are seen here and there throughout the tumour, especially in its peripheral parts, and the growth is rich in large, irregular blood vessels.

The whole anterior segment of the eye, but especially the iris and ciliary body, show a most intense small-round-celled infiltration. The anterior chamber is filled by a yellowish, clear exudate in which are seen everywhere fine, delicate, interlacing fibrils. Dense masses of leucocytes have been thrown out along the anterior and posterior surfaces of the iris into the posterior chamber and around the whole of the periphery of the lens. Elsewhere along the anterior margin of the retina and between it and the processes of the ciliary body, a fine fibrin-

ous exudate is present, in which are seen numerous, branching cells of the type of embryonic connective tissue.

The lens has undergone extensive cataractous changes. The wandering cells of the cornea are moderately increased in number; while numerous clear vacuoles are seen in the deeper layers of the corneal epithelium, resting for the most part upon Bowman's membrane. The angle of the anterior chamber is blocked on both sides by the periphery of the iris and inflammatory exudate. A most intense small-round-celled infiltration of the subconjunctival and episcleral tissues is also seen.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

An Early Sign of General Arterial Sclerosis.

FRIEDMANN. "Accentuation of the Aortic Second Sound at the Angle of the Left Scapula, an Early Sign of General Arterio-Sclerosis." *La Semaine Médical, July 4, 1900.*

Accentuation of the aortic second sound, heard best at the level of the second right costal cartilage, has long been held to indicate high arterial tension, and it is commonly present in those affected with general arterio-sclerosis. It is, however, not peculiar to, or pathognomonic of, this affection. In this, the accentuation is often just as intense over the carotid arteries, or over the supraspinous fossa. Moreover, Friedmann, of Vienna, is convinced from an examination of many patients, that in arterio-sclerotics the maximum of accentuation is always to be found at a point near the angle of the left scapula, on a line extending from the angle of the scapula to the spine of the seventh dorsal vertebra. The patient should have the arms crossed over the chest, so as to increase the interscapular space, and should breathe naturally and quickly. Stoppage of the breathing, especially in expiration, interferes with the perception of the aortic sound. Friedmann has found that in healthy subjects and up to the age of forty or forty-five, aortic sounds heard over the back have their point of maximum intensity at the level of the spine of the left scapula, but with advancing years this point becomes lower, though never reaching the lower angle of the scapula, unless there is general arterio-sclerosis. He has observed this sign (maximum accentuation at the lower angle of the left scapula), not only in advanced arterial disease, but in the initial stages of this affection, even in relatively young persons (thirty-two to thirty-four years of age). On the other hand, he has not been able to discover it in old persons who appeared to be free from vascular lesions. He

concludes that this is an early and pathognomonic sign of general arterio-sclerosis.

Idiopathic Dilatation of the Colon.

FUTCHER. "Idiopathic Dilatation of the Colon." *Bulletin of the Johns Hopkins Hospital, May, 1900.*

In this patient, a child four years of age, nothing was specially noted during the first few months, but at the end of a year it was observed that the abdomen was very large. With this there was obstinate constipation lasting six or seven days followed by severe attacks of diarrhœa, the motions being of a drab or whitish colour. During the periods of constipation the child was very dull, but at other times did not suffer and seemed very bright. He had been attended to prior to his admission to the hospital, and was getting irrigations of the bowels twice daily.

On admission, there was a very striking, symmetrical distension of the upper part of the abdomen, particularly above the level of the umbilicus. No definite peristalsis could be made out, even by stimulation with a cold towel. Daily irrigations of the bowel produced in each case fairly large, constipated stools. There was no pain, except at times when an enema was given, due to irregular contractions of the bowel. At present the abdomen was a little softer than on admission and no fœcal concretions could be detected.

Futcher reviews the types and causes of dilatation of the colon. There are four classes or types. In the first are grouped cases of simple gaseous distension. In the second are the cases in which there is distension from solid contents,—fæces, foreign bodies or, more rarely, gallstones. The third class comprises cases due to organic obstruction in front of the distended bowel. The fourth class includes the so-called idiopathic cases. Treves holds that even in these there is always some actual constriction of the bowel. The bowel becomes enormously enlarged and its muscular coats hypertrophied. No change is found in the mucosa. Such was the case reported by Formad and commonly known as the "balloon man."

The subjects of idiopathic dilatation of the colon usually die at an early age, but if under careful supervision, they may live with comfort for some years. In some cases operative measures afford some relief. Usually the operation consists in making an artificial anus, but Treves in one case removed a large part of the colon with success.

Splenic Pseudoleukæmia.

CABOT. "Splenic Pseudoleukæmia, Historical Sketch." *Boston Medical and Surgical Journal, Nov. 17, 1900.*

The writer briefly alludes to the history of, and the revival of interest

in, this condition, and to the confusion in the nomenclature arising from the many synomyms in use. He inclines to the term "anæmia with splenic enlargement." In going over the literature of the subject, it is very difficult to separate out the cases of leukæmia and of enlargement of the spleen due to various causes like malaria and syphilis, and to distinguish all the forms from the symptom-complex of the condition under consideration.

The cases to be excluded are those with an obvious history of malaria, those in which the signs point strongly to cirrhosis of the liver, and those in which an imperfect blood examination makes it impossible to exclude pernicious anæmia. Cabot only includes such cases as show a marked anæmia with considerable splenic enlargement, without any known cause either for the anæmia or for the enlargement of the spleen, and with no leucocytosis. The symptomatology of such cases is simply that of progressive or relapsing anæmia, combined with the local disturbances and annoyances due to great enlargement of the spleen. Hæmorrhage seems to be more frequent a factor than in other varieties of anæmia. The spleen is considerably enlarged in the great majority of cases but not to such an extent as is usual in advanced cases of myelogenous leukæmia, reaching usually to or not quite to the level of the navel. Perisplenitis is relatively infrequent. The liver is usually somewhat enlarged, and the retroperitoneal glands occasionally so. The increase in the size of the spleen is due in most cases to fibrous hyperplasia, the Malphigian bodies being more or less atrophic. This an important finding, if true, and is the opposite of what is usually found in leukæmia and in Hodgkin's disease. In the earlier records stress is laid upon the severity of the anæmia, while in Osler's series, the blood resembles that found in chlorosis.

It is important to distinguish from this condition :—

(1) Cases of idiopathic splenic enlargement without any anæmia or any other symptoms.

(2) Pernicious anæmia in which enlagement of the spleen, sometimes considerable, is almost always present.

(3) Cirrhosis of the liver. The fact that a certain degree of interstitial overgrowth has existed in some of the cases of splenic anæmia, and that there often is an anæmia with cirrhosis of the liver, makes the distinction between these two conditions, especially *intra vitam*, a matter of very great difficulty.

(4) Splenic tumour associated with chronic malarial poisoning. The absence of malarial parasites at any given time, in persons living in a malarial district, is not sufficient to exclude chronic malarial infection.

(5) Leukæmia is to be excluded by blood examination.

(6) The anæmias of children are very frequently associated with splenic enlargement, with or without leucocytosis. In such cases there is usually a history of rickets or syphilis.

Different writers give a very different idea of the prognosis of the disease. According to Osler, it would seem to be a relatively favourable one. Splenectomy has been tried with success in one of his cases. It is reasonable treatment, in view of the fact that splenic enlargement seems to have preceded the anæmia in all recorded cases in which the question has been looked into thoroughly.

H. A. Lafleur.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Prostatic Atrophy after Castration.

KEYES. "The Evidences of Prostatic Atrophy after Castration." *Medical Record, July, 1900.*

In spite of the various means which have been advocated during recent years for the treatment of enlarged prostate, the same measure of success has not been met with in dealing with these cases, in comparison with advances made in other branches of surgery. The class of patients with which the surgeon has to deal, has, no doubt, much to do with the poor results so frequently obtained. They are usually men well up in years, their general health more or less deteriorated by their malady, with a diseased bladder, abnormal urine and, very often, serious lesions of the kidney. It is hardly to be wondered that the mortality in cases of prostatectomy is very high, and that other operative procedures, such as the Bottini operation, are more palliative than curative; indeed, not even palliative, in many cases.

Any objection which might be advanced against castration, as depriving the patient of his testes, does not cut much figure in these cases, owing to the patient's age. Unfortunately the practice of castration does not appear to lead to all the good results, which one might be led to infer, in arguing from analogy. In a series of twelve cases collected by Dr. Keyes, cases in which it was possible to examine into the condition of the prostate subsequently to removal of the testes, in only two was there evidence of beginning atrophy of the gland, and in these the time elapsed after castration was ten and eighteen days respectively, rather a short period for any considerable degree of fibrosis to have occurred.

Dr. Keyes gives the following history of a case which was recently under his care :—The patient, aged 63, was first seen in August, 1898.

He was suffering from intense dysuria. The clinical history dated back to 1897, when he had had an attack of complete retention of urine, which had lasted one week, but from which he recovered so completely that he was able to dispense with the use of the catheter. In June, 1898, he began to have some pain on micturition, and from that time on the pain steadily increased. The urine was bloody and contained muco-pus. On examination, the prostate was large and firm. There was about three ounces of residual urine in the bladder. No stone could be detected. Treatment for relief of the bladder symptoms having proved ineffectual, double castration was performed in October, 1898. But little relief was obtained from the operation, and the patient continued to urinate about every hour, using a catheter. In October, 1899, he returned to hospital for treatment of profuse hæmorrhage from the bladder, and bringing with him a small facetted phosphatic calculus. He refused operation at that time, and it was early in February, 1900, that he consented to have the bladder opened. Epicystotomy was performed; thirty-two stones were removed; and two tumours of the prostate were at the same time enucleated. After a tardy convalescence, the patient was in fairly good health by the month of May following.

The pathological report of the tumours removed, after dealing minutely with the conditions found, states :—" The insignificant amount of fibrous change, the comparative infrequency of dilated or cystic, degenerated tubules, and the very large amount of muscle tissue, would indicate that there had been but a very slight development of fibrous tissue;....the changes noted in the preparation made from the prostatic tissue are no more pronounced than are those frequently observed in many so-called normal prostates."

In this instance, then, after a lapse of sixteen months, little or no evidence of retrogressive change in the gland was found.

It may be that in those cases where improvement does occur, the good effects are the result of the local depletion of blood, and not of atrophy of the prostate. Furthermore, as Dr. Keyes remarks, experiments relating to the normal prostate, do not of necessity apply to the diseased and enlarged gland.

Purulent and Tuberculous Joints Treated by Pure Carbolic Acid and Drainage.

Phelps. " The Treatment of Tuberculous and Purulent Joints with Large Glass Speculum, Drainage and Pure Carbolic Acid." *New York Med. Jour., Sept., 1900.*

Dr. Phelps strongly advocates the early incision of suppurating and tuberculous joints, urging that by this means one may discover the parts

of the joint involved, the amount of destructive change which has taken place, and also that the joint may be thoroughly drained. By an early operation, much of the destruction which occurs in tuberculous cases may be avoided, complicated as they not infrequently are by the burrowing of pus through the tissues in the neighbourhood of the joint.

To prevent suppuration after opening one of these joint abscesses, Dr. Phelps uses pure carbolic acid. His method is as follows :—The abscess cavity is laid open, the opening in the capsule found and enlarged, and the joint is exposed. If there is extensive bone disease, the incision is lengthened, and the capsule of the joint freely divided for one-half or two-thirds of its circumference, the head of the bone is pulled out from the socket, the curette freely used, and the joint thoroughly irrigated with bichloride solution, 1 to 1000. The joint is now filled with pure carbolic acid, where it is allowed to remain for exactly one minute, after which the joint is thoroughly washed out with pure alcohol and, finally, with a two per cent. solution of carbolic acid. A large glass tube is then introduced, and packing may be inserted through the tube. A large glass tube not only secures perfect drainage, but it also enables the surgeon to judge from day to day the condition of the joint cavity. If there be further extension of the disease, curetting and the use of carbolic acid may be applied through the tube without disturbing it.

The glass tubes vary from half an inch to two and a half inches in diameter. In length, the tube should reach the surface of the skin and no more. If it has not been necessary to use the curette, the wound may be closed with the insertion of the smaller tube. From nine to twelve pounds extension is applied during the treatment.

E. J. Semple.

Gynæcology.

UNDER THE CHARGE OF WILLIAM GARDNER.

Method of Making Applications to the Vaginal Vault.

HOWARD KELLY. "A New Method of Making Applications to the Vaginal Vault." *Amer. Gyn. and Obstet. Jour., March, 1900.*

Not being satisfied with the present method of making applications to the vaginal fornices, Dr. Kelly has devised a new instrument for this purpose. It consists of a glass cylinder open at one end and at the other tapering suddenly into a much smaller tube, which is bent at right angles to it. Near the open end a short glass tube enters, this tube being connected with a rubber ball by a piece of rubber tubing.

The instrument is used with the patient in the knee-chest position, the perineum being raised by a Sim's speculum. The end of the long glass tube is now inserted to the top of the vagina and a dry tampon placed in position. The fluid to be applied is now placed in the glass cylinder, which is at present in the upright position, after which its open end is closed with the thumb and the instrument inverted. By now pressing the rubber bulb the fluid is forced out into the vault of the vagina and the instrument is withdrawn. The chief advantage claimed for this method of making topical applications is its cleanliness.

An additional instrument described by Dr. Kelly is an adjunct to the usual douche tube, and has for its object the thorough distension of the vaginal walls by the fluid used. This instrument consists of a blunt short cone of hard rubber perforated in its centre by an attachment for the rubber tubing connecting it with the douche bag, and having a stout handle attached to the side. The apex of the cone is inserted into the vagina until the latter is blocked, after which the fluid is allowed to flow into and distend the vagina. After being retained for about one minute or so, the fluid is allowed to escape by partially withdrawing the cone.

Parasitic Tumours of the Uterus and Ovaries.

HENRY C. COE. "Detached or Parasitic Tumours of the Uterus and Ovary." *Amer. Gyn. and Obstet. Jour., March, 1900.*

In the study of these conditions the pathologist must largely depend upon the abdominal surgeon for data from which to determine the original site of these growths, as their structure may become so greatly altered as to completely conceal their origin.

Dr. Coe cites the following three cases which had come under his own observation.

Case I.—After the delivery of a woman, 35 years of age, of her first child, a solid tumour the size of a fœtal head was discovered in the right side of the pelvis, and a diagnosis of a pedunculated, subperitoneal fibroid was made. Six months after the birth of the patient's second child, she suffered from an attack of peritonitis, which recurred upon several subsequent occasions. The first attack was followed by a constant, steady pain in the region of the right ovary, which pain persisted until the woman was seen by Dr. Coe. At the operation a fibroid the size of a Messina orange was found imbedded in the uterovesical pouch, and to have the omentum adherent to its upper surface. The omentum was separated and the tumour enucleated, there being no sign of any pedicle, the tumour apparently being nourished by means of its adhesions to the uterus and its site of implantation, both of which contained large and numerous vessels.

The operator considered that the tumour was originally a subserous

fibroid of the anterior surface of the fundus, which had become detached by axial rotation. It had then descended into the uterovesical pouch where it had become adherent in addition to its omental attachment.

Case II.—In the second case a diagnosis of pyosalpinx had been made, but operation revealed a solid tumour adherent to the peritoneum of the uterovesical pouch and entirely independent of the uterus and its adnexa. Upon making section through the growth, it was found to be composed of cheesy material which contained tubercle bacilli.

Case III.—This was a specimen examined for Dr. T. A. Emmet some years ago. The growth was fibrocystic, and on section was found to consist of a fibroid, which had become firmly attacked to an ordinary, multilocular cyst of the ovary. The fibroid was supposed to have originated in the uterus, although no evidence of such an origin could be discovered, it receiving its pabulum from the large vessels of the cyst wall.

These "migratory" (Dr. J. S. Stone), or "parasitic" (author) tumours become detached from their original site and adherent to their new host by gradual torsion and inflammation; while the former is taking place chronic inflammation occurs, plastic lymph is thrown out, aud thus fastens the growth to the nearest object. The two processes taking place synchronously, there is no sudden interference with the blood supply, consequently no hæmorrhage into the tumour, or no necrosis which one could get in a more acute form of torsion. This chronic torsion is very difficult of diagnosis but Allan Doran states that "dull, constant, abdominal pain in a patient who keeps in good health and bears a cystic tumour that increases but little or not at all in the health of many months or years, is a suspicious symptom."

Post-Operative Care of Patients.

HENRY T. BYFORD. "After Treatment of Peritoneal Section." *Amer. Gyn. and Obstet. Jour., April, 1900.*

The writer has found that where peristalsis of the bowels is procured immediately after operation, the patients suffer from much less disturbance than where this action is deferred. He gives two drachms of fluid extract of cascara, or some equally efficient purgative, two hours before operation. As soon as consciousness is restored after the operation, one drachm of magnesium sulphate is given hourly for several hours and, beginning eight hours after operation, a high glycerine and water enema is given every two hours, one having been given before the patient left the table in all cases where there were pelvic adhesions. This treatment must be carried out until sufficient peristaltic action is obtained, as evidenced by the passage of flatus not only with the enemata but between them.

Where much blood has been lost, a large, high, beef-tea enema is substituted for the above, and is repeated every four hours. If made of a sufficient strength, this will usually cause an evacuation of the bowels within twenty-four hours.

Plastic Gynæcology.

J. M. Cotterell. "An Operation Performed for Complete Atresia Vaginæ." *British Medical Journal, April 7, 1900.*

The patient operated upon was apparently a well-developed woman who had always enjoyed the best of health, and who had suffered from no periodic disturbance. Local examination revealed normal mons veneris and labia majora, but the nymphæ were poorly developed. The clitoris and urethra were normal in every way. Between the meatus and anus was an area of smooth, thin skin, which in the centre was slightly pinkish in colour and moist, but there was no central depression. Rectal examination showed complete absence of a vagina, and bimanually a uterus the size of an almond with correspondingly small ovaries was made out.

With the patient in the lithotomy position, an H-shaped incision was made over the smooth area of skin, the uprights of which ran from the posterior extremities of the atrophied nymphæ to just beyond the anus, with the cross-bar midway between the anus and urethra. The flaps thus marked out were reflected back, and a large opening made in the cellular tissue between the rectum and urethra. A pair of flaps measuring 7 by 3 inches were dissected up from each thigh, the inner incisions starting at the anterior ends of the uprights of the H, and running down and out along the thigh, each external incision beginning just below the point of origin of the tendon of the adductor longus. These flaps were then brought together with their raw surfaces approximating and the edges sutured together, after which the sac thus formed was invaginated into the above mentioned space and packed with gauze, in order to maintain the raw covering of the sac in close apposition with the walls of the previously formed cavity. The edges of the raw surfaces on the thighs were readily brought together when the patient's legs were straightened out, and were held thus by sutures.

Good union was obtained and the passage kept patent by introducing into it an india-rubber bag, which could be dilated by means of a bulb syringe. This was inserted and worn for half an hour, twice daily, after the gauze plug had been removed. As the uterus and ovaries were functionless, no attempt was made to bring the cervix down into the vagina. The operation was an entire success in every way.

F. A. L. Lockhart.

Society Proceedings.

CANADIAN MEDICAL ASSOCIATION.

The Thirty-third Annual Meeting of the Canadian Medical Association was held in Academic Hall of the University of Toronto, on September 12th, 13th and 14th, 1900.

Morning Session, September 12th.—The meeting was called to order by the President, Dr. R. W. Powell, of Ottawa, and the General Secretary, Dr. F. N. G. Starr, of Toronto, read the minutes of the closing session of the last annual meeting.

The report of the Committee of Arrangements was presented by the Chairman, Dr. Dewar, of Ottawa, an announcement being made of the various entertainments provided for the visiting members by the profession of Ottawa.

A Case of Sarcoma of the Right Nasal Fossa with Acute Sinusitis and Orbital Cellulitis.

Dr. P. G. Goldsmith, of Belleville, reported the following case :— The patient was a man of thirty-eight years, a farmer, with an unimportant family and personal history. He consulted the doctor on the fourth of August last with severe frontal headache and double vision. The nasal fossæ were examined and growths found in the right one which, along with some bone, were removed. Then swelling and pain in the right eye began, so that it was seen to project downwards, outwards and forwards. The right nasal fossa was curetted and the tissues sent to Professor Anderson of the Trinity Medical College Laboratory at Toronto, who pronounced them sarcomatous in their origin and nature, of small-round-cell variety, having the walls of the blood vessels thin and poorly developed. The discharge from the nostril had an odor similar to that proceeding from cancer of the uterus. Up to ten years ago, Bosworth had collected forty of these cases.

Dr. R. A. Reeve stated that a number of years ago he had presented a paper on the same subject to this association. He directed attention to the importance of examining the naso-pharynx in diseases of the orbit. He recited a similar case to Dr. Goldsmith's. In his case there was little pain, but an examination of the nose revealed the tumour.

The Present Status of the Eliminative and Antiseptic Treatment of Typhoid Fever.

Dr. W. B. Thistle, of Toronto, said that it was now some seven years since he had introduced this plan of treatment to the profession.

He thought that this plan of treatment of typhoid fever had time and again been misrepresented by Professor Osler and others, as he had never held to the opinion that the eliminative and antiseptic plan could rid such organs as the liver and spleen of the bacilli lodged in them. When once the typhoid bacilli gain access to the intestinal tract, the multiplication of them occurs with extreme rapidity, and the intestinal contents teem with countless numbers of them. These are not confined to the intestine, but are to be found in the walls and, in fact, in almost every organ of the body. He was of the opinion that the draining of the intestine following upon the action of a purgative, such as calomel or magnesium sulphate, would tend to get rid of some of these bacilli in the intestinal walls, but he did not claim that it would affect their exit from the liver, etc. The treatment, Dr. Thistle thought, had been imperfectly applied in many instances without a clear conception of its underlying principles. Dr. Thistle has never had a single hæmorrhage under his plan of treatment, what hæmorrhage occurred having been always very slight, and he has also seen very few perforations. In Toronto, this plan of treatment is universally adopted. The statistics at the Toronto General Hospital show, that from 1893 until the present time, there have been 833 cases in that institution, with 56 deaths, a mortality of 6⅛ per cent.

In discussing this paper, Dr. McPhedran said that he had been watching Dr. Thistle's work in this direction from the time of the appearance of his first paper on the subject, but could not agree with all his conclusions. He did not think that this plan of treatment lessened diarrhœa, tympanites, fever or delirium; and considered that Dr. Thistle was harboring the idea that purgatives in typhoid were a new discovery with him. This was not so. Twenty-five years ago, Dr. McPhedran gave these, for the first ten days at least. In addition to this he used to give carbolic acid and iodine, and in a certain class of cases, he had thought he had the exact treatment. Another class would then come along in which that treatment had no effect whatever. He considered that the general toxæmia that existed, could not be eliminated through the bowel. It had to be done through the kidneys and skin.

Replying to the criticisms of his paper, Dr. Thistle emphasized the fact that he was *not* trying to eliminate bacilli from the glands. In clearing out the bowels, he is trying to eliminate *toxins* from the body and not bacilli.

Afternoon Session, September 12th:

The President's Address.

The President, Dr. R. W. Powell, of Ottawa, delivered the Annual Address, which is published at page 639 of our September Number.

Some of my Experiences in the South African War.

Surgeon-Lieutenant-Colonel G. S. Ryerson, of Toronto, then addressed the Association upon this subject. He dealt first with the experience gained of modern bullets in this campaign. The very latest returns show that 986 officers and 11,701 non-commissioned officers and men have been wounded, of whom only 732 have died of wounds received in battle, which is to be ascribed to the aseptic character of the bullet, and the prompt attention and antiseptic treatment. Dr. Ryerson then dealt with the wounds caused by these bullets. Referring to poisoned bullets being used, this was not the truth, as the tarnish or verdigris when present, probably was burnt off in transit through the barrel. He also doubted the fact of explosive bullets being used. The Boers made use of thousands of Martini-Henrys, a heavy bullet, which caused great destruction of soft parts, necessitating amputation. There were few amputations in this war. He quoted Kendal Franks, who had performed 20 amputations in 2,000 cases. Whilst abdominal section in wounds of the abdomen was mainly inadvisable, he saw one case where the results were excellent. He spoke highly of the magnificent work of the Royal Army Medical Corps.

At the conclusion of this able address, Dr. T. G. Roddick, M.P., highly complimented Dr. Ryerson for his remarks and further spoke of his great sacrifice in proceeding to South Africa at his own expense in order to carry out the work of the Red Cross Association. While in England recently, Dr. Roddick stated, he made it his special business to inquire of returning Canadian soldiers as to the hospital management in South Africa, and although he had spoken to many of these, he had failed completely to find a single Canadian, who had anything but praise for the hospital arrangements in that country.

Our Race and Consumption.

Sir James Grant, of Ottawa, read a paper on this subject. (See September number, page 673).

Some Remarks as to the Treatment of Locomotor Ataxia Based Upon an Experience of Thirty Years.

Dr. Allan McLane Hamilton, of New York, presented a paper which was read by the President in his absence. It is published at page 737.

The Physician's "Vaster Empire."

Dr. John Hunter, of Toronto, contributed this paper. It dealt with sanitary science, education, social purity and medical missions. Referring to sanitary science, he entered a plea for the broader and freer application of the principles of this branch of medicine, in the building and constructions of our homes, schools, churches, theatres, etc. No

dwelling house should be constructed except under the supervision of an architect and a physician versed in the principles of sanitary science. Another important question was that of our educational system,—the mental and physical development of our school children. The best way to secure physical vigor and high mentality was surely within the province of the physician to grapple with and study. In all forms of social purity, physicians should speak *ex cathedra* against every form of vice and immorality. The boys and girls of the family should be enlightened as to their sexual proclivities at proper periods by their fathers and mothers respectively. In medical missions, he referred to the vast field for medical missionary work in foreign countries.

Evening Session, September 12th:

The Address in Surgery.

Mr. Edmund Owen, of London, England, delivered the address taking as his subject. (See page 719).

Excision of the Knee-Joint in Tuberculous Disease.

Mr. A. Primrose, of Toronto, read a paper on this subject which we will publish in our November number.

Recent Pathological Studies of the Blood.

Dr. L. H. Warner, of Brooklyn, contributed a scientific paper with the above title. At the outset he asserted that he believed there was a necessity for experiments for the progress of pathology. His researches were directed along three lines of inquiry, viz:—experiments, observation, and individual observation at clinics in hospitals. He considered that the examination of the blood in most cases was of more importance than an examination of the urine. Dr. Warner gave the formula of a new staining solution which he had found very practicable:—The blood specimen should be prepared in the regular way. The slides are heated in a hot oven to 98 degrees C., then immersed for one minute in a one per cent. aqueous solution of methylene blue ; washed in water ; then in a one per cent. alcoholic solution of eosin, washing again with water, and then in a one per cent. solution of Bismarck brown. Dr. Warner's paper was illustrated with suitable diagrams.

Morning Session, September 13th.

Some Experience in the Treatment of Hernia.

Dr. F. J. Shepherd, of Montreal, contributed a paper on this subject. (See page 753).

Dr. Lapthorn Smith discussed this paper and the cases described, although his experience lay mostly in ventral and umbilical work. In some of these he had seen them so large as to require twenty stitches.

During the past two years he has abandoned silk and resorted to catgut, chromicized, which he always prepared himself.

Dr. Shepherd stated if there was any oozing in the wound he would pass a probe in between the edges to let out the accumulated serum. This he finds to be quite efficacious, as then you minimize the chance of the introduction of any germs from without.

A Case of Syphilitic Gummata of the Spinal Cord Successfully Treated by Enormous Doseses of Iodide of Potash.

Dr. F. W. Campbell reported this interesting case. It occurred in a man of highly neurotic temperament who a short time before the onset of symptoms of a definite character, had suffered from repeated attacks of insomnia of a very aggravated character. When this sickness began, there were noticed retention of urine and loss of power in the lower limbs. The patellar reflex was about normal. The loss of power in the lower limbs was absolute. The pulse varied from 80 to 96; the temperature never above 99° F. The stomach remained in fairly good condition all the time. A consultant from New York was brought on and a diagnosis established of tumour of the spinal cord situated about the first lumbar vertebra, which might be sarcomatous or syphilitic. The advice of the consultant was to give 500 grains of iodide of potash per day, commencing with drachm doses three times a day. Dr. Campbell detailed minutely the daily history of the patient while getting him under the large dose and then again whilst it was gradually being withdrawn. The patient is alive to-day and in good health, having recovered complete control of his lower extremities.

The Address in Gynæcology.

Dr. William Gardner, of Montreal, delivered the address, taking for his subject, "Mistakes in Diagnosis and Treatment." It was published in our September number.

An Unnoticed Factor in the Production of Abdominal and Pelvic Disturbances in Women.

Dr. J. Clarence Webster, of Chicago, contributed an original paper on the above subject. Symptomatology in women, he said, was often overlooked by the general practitioner. The question of the normal relationship of the abdominal and pelvic contents was dwelt upon and then he proceeded to account for inter-abdominal pressure. He held the view that the pelvic organs as well as the abdominal were to a large extent held in their respective positions by reason of the pressure of the abdominal and pelvic walls. He stated the average sp. gr. of the viscera to be a little more than that of water; the liver was 1.5 sp. gr. He maintained that there was no proof that the mesenteries acted as constant supports or were ever meant to be such. The main factor in

restraining the viscera is the strength of the abdominal wall and pelvic floor. Local weakness of the abdominal wall has been fairly well described under hernia; while general weakness of the abdominal wall has been described as pendulous belly. General weakness in his experience is an exceedingly rare condition. As to the question of etiology, the condition is found in women who have borne children; and so, on examination of the great majority of women, there is found some degree of separation of the recti muscles in the region of the navel. All evidence later on may disappear, but permanent widening remains. The results of all this is unavoidable enteroptosis; and this is generally found in women who have been addicted to the pernicious habit of tight lacing. A very common displacement seen is that of the right kidney. Dr. Webster dwelt upon the diagnostic symptoms of these conditions and then proceeded to describe the operation he performs for their relief. This consists in bringing the edges of the two recti muscles into apposition. He first performed this operation in November, 1898. Since that time he has operated on forty-one cases and the results have been most satisfactory in all.

Mr. I. H. Cameron took exception to the word "unnoticed" in the title of Dr. Webster's paper, as he thought this was not an unknown factor in the production of the conditions mentioned in the paper.

Dr. W. S. Muir, Truro, N.S., asked what affect leaving off the use of the binder after confinements had to do with the production of these conditions.

Dr. Webster held to the opinion that this had not been noticed except by himself, and challenged Dr. Cameron to produce evidence to the contrary. The absence of the binder, in his opinion, had not made any special difference.

Afternoon Session, September 13th.

The Address in Medicine.

Dr. F. J. Shattuck, of Boston, delivered this address which has already been published in the September number of this Journal.

Gastric Hæmorrhage.

Dr. G. E. Armstrong, of Montreal, contributed this paper. He believed there was a fairly well determined field in which surgical interference may be of use in hæmorrhage of the stomach. Hæmorrhage occurs in fifty per cent. of gastric ulcers and is fatal in eight per cent. Cases are arranged in two groups, the acute and the chronic.

Rodman has reported thirty-one operations for frequently occurring or chronic hæmorrhages, with six deaths. Dr. Armstrong has operated five times for gastric hæmorrhage, one being a chronic case. In one of these the patient was getting along nicely after the operation when she

expired suddenly; and on a postmortem examination being made, thrombi were found in the branches of the pulmonary artery.

Some Cases of Stomach Surgery—Gastrotomies, two cases; Gastro-enterostomies, two cases; Pylorectomy.

Dr. A. E. Garrow, of Montreal, reported these cases, which we will publish in full in the November number of this Journal.

The Modern Treatment of Retroversion and Prolapse of the Uterus.

Dr. A. Lapthorn Smith, of Montreal, referred to the proper and most successful management of procidentia uteri in elderly women between seventy and seventy-five years of age,—a most pitiable condition. Except for this trouble the woman may be otherwise in excellent health; the perineum, however, is so relaxed that no pessary will remain in place. Then the majority of these cases had an ulcerated cervix. After confinement the uterus remained large and the pernicious habit of keeping women too long on their backs has a tendency to produce the backward displacement. Dr. Smith feels certain that women who have been relieved of this distressing condition will have little difficulty in persuading others to avail themselves of the treatment. He removed a woman's uterus a few months ago, which had been out of her body for twenty years; and the woman now assures him that she feels like a young woman. In correcting this deformity, Dr. Smith makes a small incision in the abdomen and performs ventro-fixation. After that the vaginal canal is narrowed by a large anterior and posterior colporraphy. In selected cases, he also amputates the lower half of the organ, and then stitches the vagina to the upper half. He considers ventro-fixation, if properly performed, a most reliable means of fastening up the uterus. The operation has given him the most complete satisfaction of any operation he has ever performed, especially when combined with amputation of the cervix and posterior colporraphy.

Gasoline as a Surgical Detergent.

Dr. Bruce L. Riordan, of Toronto, contributed an interesting paper on this topic. With this, the dirty, greasy hands of machinists, who are the subjects of injuries in these parts can be effectively and rapidly cleaned without the ordinary brush and soap and water. It is far better for this purpose than any method heretofore devised for cleansing. He now constantly carried a small bottle of gasoline in his surgical bag. A report from Dr. Wm. Goldie, Toronto University, showed its effects upon germs and germ life, a report which would conduce to its employment as indicated. One word of caution was thrown out by Dr. Riordan in its use; as it is a highly inflammable substance, it should not be used in any quantity near an exposed light; and then it is painful in the eyes

or ears. It is also useful in cleansing sutures of accumulated serum, blood and dressing powder, as it frees these particles and enables one to locate the stitches easier and quicker.

Dr. J. C. Mitchell, Enniskillen, Ont., stated that he had tried gasoline recently as a detergent in two very severe threshing-machine injuries, where the parts were all smeared over with oil and grease and dirt; and it was very satisfactory, as he was able to get perfect cleanliness in a very short time, both wounds healing by first intention.

Dilatation and Prolapse of the Stomach.

Dr. Alexander McPhedran, of Toronto, presented this paper, which dealt principally with prolapse. This condition rarely occurs alone, but is associated with prolapse of other abdominal organs. There is generally present as well, some degree of dilatation; and the abdomen may be prominent or flat, or even retracted. The case of a man, aged fifty-one years, was referred to, a manufacturer, who had been ailing for two or three years. The stomach was below the umbilicus. He was directed to massage the abdomen very thoroughly and to practice abdominal gymnastics. Through this treatment, combined with dietetics and some strychnine, he has been restored to health and able to resume business. Another case of a woman aged thirty-five years was reported. This woman had been the subject of recurrent attacks of vomiting for two years. The symptoms were detailed; massage and abdominal gymnastics were ordered, with satisfactory results. The different ways of examining the stomach were described; and a change of scene in treating these patients was most beneficial.

Sir William Hingston discussed the paper at some length. He thanked Professor McPhedran for having brought before the Association so valuable a contribution on so interesting a subject. He said that as a surgeon he, (Sir William), was reluctant to part with anything which might possibly belong to surgery,—but dilatation and prolapse of the stomach he thought properly belonged to medicine. The stomach in cases of dilatation is not usually the sinner, but the sinned against; and one must look for the cause of dilatation rather to the mouth, and to the faulty mode of dealing with the food when there, than to any viciousness in the organ chiefly affected. The common causes of dilatation of the stomach in his opinion are, in brief, eating too much, eating too frequently, eating too fast, eating too great a variety of things (often incompatible with each other), gratifying the palate rather than supporting the strength, and, lastly, drinking too much at or near the time of eating.

Physical Training: Its Range and Usefulness in Therapeutics.

Dr. B. E. McKenzie, of Toronto, gave a very interesting account of the methods employed by him in correcting deformities in his ortho-

pædic hospital at Toronto. The paper was illustrated by lithographs showing improvements in spinal deformities after physical training in the direction indicated. The paper embraced the results of his observations for thirteen years past ; and was ample justification of the benefits derived from gymnastics in the correction of lateral curvature, club-foot, etc. He had also found physical training valuable in hysteria and chorea, especially the former.

Interprovincial Registration.

Dr. T. G. Roddick, M.P., of Montreal, read the report of the Committee having this matter in hand. A new feature to be incorporated in the measure was that of allowing the homœopaths representation on the proposed Dominion Council, as according to the law of Ontario, they had their vested rights in that province, and so must be accorded similar interests in any proposed Dominion Council. They will be allowed three representatives, which will be equivalent to the representation from any one province of the Dominion. Their term of office will be for four years. Homœopathy, however, as such, will not be inserted in the measure, but will be classified under, "any other school of medicine having legal recognition in any of the provinces of Canada," as the British Medical Council would not recognize any such body. Dr. Roddick stated that the bill would be introduced at the next session; and advised the members of the committee from each province to bestir themselves before their respective provincial parliaments, as these bodies must sanction the measure, before it can be finally acted upon by the Dominion Parliament.

Cerebral Abscess.

Dr. James Stewart, of Montreal, reported two very interesting cases of abscess of the brain. Dr. Stewart's paper will appear in the November issue of this Journal.

Gangrene of the Leg following Typhoid Fever.

Dr. H. H. Chown, of Winnipeg, read a paper which will appear in our November issue.

Notes on Atropine.

Dr. R. D. Rudolf, of Toronto, contributed this interesting paper which will be found at page 747.

The paper was discussed by Dr. A. D. Blackader, who congratulated Dr. Rudolf upon it and said that he hoped he would pursue his studies of the subject still further. He considered that strychnine and not atropine was the most powerful heart tonic in our possession. He thought that late experiments would throw doubt upon atropine being a direct stimulant to the heart muscle ; and he would consider it

questionable practice to administer a drug, when we wanted to stimulate the heart's action, that would paralyze the nerve endings.

Lantern Slide Demonstration of Skin Disease.

Dr. George H. Fox, of New York City, conducted this demonstration. The great majority of the skin lesions shown were of syphilitic origin; and as they appeared on the canvas, Dr. Fox described their histories. One in particular is remembered from the disfigurement of the woman's face. There was a large mass of excrescences on the nose, which Mr. Fox was successful in getting rid of in the course of two or three months, leaving only a slight superficial scar. He laid down a timely word of caution in treating syphilitic conditions, that when the patient was run down and emaciated through large doses of mercury or iodide of potash, not to keep on pushing these drugs, but to desist for a time, and in the interval endeavor to build up the patient's strength and general condition. When that was accomplished, return to the specific treatment, and the results would be found to be more beneficial.

Dr. F. J. Shepherd showed a very interesting case, a boy of sixteen years, who at the age of six sustained a very severe cutting injury of the nerves and vessels of the axilla, all the nerves below the cords of the brachial plexus being cut completely through. At that time, ten years ago, Dr. Shepherd dissected out each nerve separately and united their respective ends by suture. All did well with the exception of the musclo-spiral, and as a consequence of this the lad has no control over the extensors of the fore-arm.

The Successful Treatment of Two Important Cases of Disease of the Eyes by the Combined Methods of Mercury and Iodide of Potash Internally and Pilocarpine Hypodermically.

Dr. G. H. Burnham, of Toronto, reported two cases successfully treated by his combined method. Under this method a permanent result is got. This treatment has a wide application. Whether iodide of potash, or mercury, or the iodide alone, be given internally, in suitable cases without satisfactory results, if the pilocarpine be added, good results will always follow.

Mental Sanitation.

Dr. R. W. Bruce Smith, of the Brockville Asylum, contributed the last paper. It was a plea for prophylaxis in insanity; and he thought that much would be accomplished in this direction during the twentieth century. Insanity was on the increase in Canada, and it can be ascribed to the fact that, while these unfortunates are well taken care of when they become insane, there have been no preventive measures employed. In order to accomplish good in this direction, we must seek either to lessen the demands on, or to strengthen the resisting power of the brain.

He condemned inter-marriages in families and also amongst those of a deranged mentality. Fifty per cent. of the cases of insanity were hereditary, and the descendants of these should be careful in contracting marriage ties. He referred to a portion of one county in Ontario alone, where indiscriminate marriage and inter-marriage has become most fruitful; and he has seen several members of one family from that locality inmates of the same institution at the same time. He considers that the day may yet dawn when we will give the same attention to the rearing of children as we now do to the breeding of horses. Speaking of farm life and the tendency it has to melancholy, he thought this class of the community should receive education in participating more in the enjoyments of life, and not to continue to rot in domesticity. An upheaval in the sentiment and surroundings of the rural homes would work wonders in prophylactic principles.

Dominion Anti-Consumptive League.

The Canadian Medical Association endorsed the scheme for a Dominion Anti-Consumptive League, and recommended the following as provisional officers :—Honorary President, His Excellency, Lord Minto; President, Sir James Grant, Ottawa; Secretaries, to be the secretaries of the different provincial boards of health. Secretary-Organizer, Rev. Dr. Eby, Toronto; Treasurer, J. H. Courtney, Esquire.

Medical Defence Association.

The Association also recommended the formation of a Medical Defence Association and appointed Dr. V. H. Moore of Brockville as permanent chairman to work up the scheme.

Election of Officers.

President, H. H. Chown, Winnipeg; Vice-Presidents for the Provinces as follows :—P.E.I., H. D. Johnson, Charlottetown; Nova Scotia, A. J. Maiter, Halifax; New Brunswick, T. D. Walker, St. John, Quebec; A. Lapthorn Smith, Montreal; Ontario, A. A. Macdonald, Toronto; Manitoba, J. A. Macdonald, Brandon; N.W.T., J. D. Lafferty, Calgary; British Columbia, S. J. Tunstal, Vancouver; Treasurer, H. B. Small, Ottawa; General Secretary, F. N. G. Starr, Toronto. Next place of meeting, Winnipeg.

Sir Wm. Hingston and Dr. F. W. Campbell, Montreal, were appointed on the Board of Governors of the Victoria Order of Nurses.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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WILLIAM GARDNER, FRANK BULLER,
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WITH THE COLLABORATION OF

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J. M. ELDER, F. A. L. LOCKHART, KENNETH CAMERON,
D. J. EVANS, W. F. HAMILTON, C. W. WILSON.
A. E. GARROW, E. J. SEMPLE, A. G. NICHOLLS.

VOL. XXIX OCTOBER, 1900. No. 10.

SERUM THERAPEUTICS AS A BUSINESS.

It was quite to be expected that the recent studies by competent scientific men of the properties of the blood serum of various animals, treated or untreated, in laboratories, and the practical application of such knowledge, by qualified practitioners, to the cure of disease, should lead to the vulgarization and "commercialization" of the method, and that non-medical persons (wrongly called the laity) should seek to turn an honest penny by trafficking in "serums" or "lymphs" of various kinds without having the seal of scientific approbation stamped upon their wares. In truth, these serum-jobbers might well plead in excuse that just as worthless, if not harmful, agents have repeatedly been foisted upon the public by large and well-known manufacturing drug firms, under the supervision and sanction of supposedly, qualified investigators, "in our own laboratory," and not infrequently also by unscrupulous physicians, in search of a more rapid accession of wealth than that afforded by legitimate medical practice.

Among the latest of these medicaments is "The New Animal Therapy in the Treatment of Disease" (The Roberts Lymph Compound and The Roberts-Hawley Lymphs). This precious nostrum had its origin in Chicago and, from a pamphlet now before us we see, that its

sphere of action has been extended to the population of the Maritime Provinces, where a number of "institutes" (one at Truro, N.S.), have been established. These institutes, at least in some cases, are, we regret to say, in charge of practitioners holding a license to practice in the country.

The promoters of this particular serum treatment are very careful to state that their pamphlet "is not used as an advertisement," that "the physicians who are using the lymph are of high standing and ability," that "no advertising, guaranteeing, or other unprofessional conduct, is tolerated," and that "the ingredients of the lymph are published and no secret formulas are used." A very cursory glance at the document, however, shows that it is a money-making affair, pure and simple, and the absurd claims made for the efficacy of the lymph, in some twenty-five or thirty diseases of widely different etiology, is enough to stamp it as a fraud.

There are some redeeming features in this pamphlet—it is distinctly humorous in places. To wit, the description of the source and properties of the lymph.—"We use the healthiest, richest in tissue elements, and hardiest animal known, in the fourth or fifth month of life, when the cells are most active,—the *Rocky Mountain Goat*. This animal is specially bred, and is dieted and watched from birth until it is used."

Possibly this particular kind of goat was selected as it was rather rare and hard to get, and consequently justifies a high price being put upon its valuable body juices. No doubt a Harlem goat would be infinitely cheaper to get, to breed, and particularly to "diet," but possibly inferior in "vital principles," (certainly in moral ones).

Among the many benefits claimed to be conferred by this goat-lymph, apart from the cure of definite diseases, are the rejuvenation of the old and the arrest of senile decay (whether premature or not), "increased agility and suppleness of movements" being naturally the first and obvious result to goat-lymph injections. It is also interesting to note that there is a "restoring of strength and health to the generative organs"—which was to be expected, knowing the goat.

The interesting pamphlet does not inform us whether those who have undergone the treatment are more prone than their fellows "to play the goat," but it must be so, and as there are enough human "goats" in the world, we would advise our readers and the public generally, to refuse "to play the goat under—Roberts" or any other equally silly nostrum.

MEDICAL DEFENCE.

We cannot by any words of ours place more forcibly before our readers the terrible hardship inflicted upon the practitioner who becomes the victim of a scheme of blackmail, than did Dr. Powell in his

Presidential address to the Canadian Medical Association at Ottawa, printed in last month's number of this Journal. The practitioner so persecuted is bound in self-defence to preserve his honor, professional reputation and his standing in the community, even if in doing this he, through the machinations of disreputable lawyers—and only disreputable lawyers take up such cases—is harrassed for long months, as the case passes from court to court. He preserves that reputation and standing in the community at a terrible personal cost and at a risk, it may be, of being rendered penniless.

So terrible is this trial that all of us sympathise with the victim of blackmail and, as a matter of principle, are agreed that the profession as a body, rather than the individual, should undertake the defence in cases of this nature. It is not right that the individual should suffer so greatly in maintaining along with his own honor, the fair fame of the profession as a whole. Nay more, we all recognise that the essence of blackmail lies in this, that those who bring suits of this nature against practitioners, rely upon the isolation of the practitioner; they know full well the pecuniary loss involved in defending a case and the horror felt by right-minded individuals in being even suspected of malpractice, and they expect that rather than go before the courts the practitioner will consent to be fleeced, knowing that if he does not so consent, he runs the chance of social and financial ruin. The very union of the profession to contest such a case, the knowledge that a corporation adequately endowed with funds and able to summon to its aid the best legal advice is prepared to fight the case, would largely put a stop to blackmailing.

From every point of view, therefore, we acknowledge the advisability of establishing in this country a scheme of Medical Defence, and we are delighted to see that the Canadian Medical Association has taken up this matter and has appointed a committee to report upon the subject at Winnipeg next year. This we trust means the certain establishment of a Medical Defence Union in Canada.

But while we are glad to see that this committee has been appointed, we realize that it has a difficult task before it in determining what scheme to propose or to approve. The experience of the Medical Defence Union in Great Britain is not very hopeful. We do not mean to say that as a body the British Defence Union has not accomplished great good ; for it has. Thanks to its existence cases of blackmail have been singularly rare ,and large numbers of such cases in Great Britain, have been arrested at their very onset. It has, however, undoubtedly been found that that Union has been constantly inadequately supplied with funds ; it has not nearly received the support that it should from the profession at large.

The reason why this should be so is, we think, easy to understand. That Society depends upon the annual subscriptions of voluntary members. Now, as Mowgli was forced to remark, men are blood relations to the Bandar-log, and like the Bandar-log the individual man and individual practitioner, tends to regard himself as superior in cleverness and in knowledge to the rest of the jungle. Most individuals think themselves too circumspect in their dealings with their patients ever to place themselves in such a position as to render themselves liable to blackmail. And so the majority, feeling assured that they will never be in need of aid from a defence union, fail to recognise the advantage, nay the duty, in paying the annual subscription to the funds of such a union.

We in Canada must, it seems to us, employ some other method. As suggested by our Montreal Medico-Chirurgical Society, it would seem well that this matter of medical defence, should be taken up by some body or bodies already in existence, by the various Provincial Colleges of Physicians and Surgeons or better, by the Canadian Medical Association, as representing the whole Dominion—and that the funds necessary for carrying on this defence union, be obtained other than by annual subscription. Doubtless several schemes will be suggested and discussed ; we would, however, urge that this committee shall keep before it the following main principles :—

1. To have the most powerful organization of the profession as a whole that is possible, so that in the start the would-be blackmailer will clearly recognise that he has to fight a powerful corporation.

2. To keep the running expenses in connection with the defence organization at the lowest possible figure. This again is favored by having the matter taken up by some corporation already in existence and already having a staff of officers.

3. Not to depend upon annual subscriptions limited to the one object of medical defence, but to elaborate some scheme whereby every practitioner obtaining his license to practice or already in practice, contributes a small sum to form the main nucleus of the defence fund, everybody so contributing being protected by the defence union or the corporation undertaking this work (provided that upon examination it be found that the case is truly one of blackmail).

We would suggest that this defence fund be administered by a central body in such a way that should a case requiring defence occur in any province, that province should be apportioned a contribution out of the main defence fund, proportional to the number of active contributors in that province.

Further, we suggest that this contribution proving inadequate to

meet the costs of the same, a small assessment be levied upon members of the profession in that province, it being understood that those failing to meet this assessment thereby forfeit the right to be defended in case they become subjects of blackmail, the central committee having in addition the right to contribute still further from the main fund to the costs of a case provided this assessment be found still inadequate.

By some such scheme as this the contributions and the expenses would be at a minimum; the funds would be elastic and in case of need could be suitably increased.

While we recognise on the whole, that the Canadian Medical Association is the most suitable body to take up this matter, there is yet one weak point in the organization of the same to which we might here call attention. We refer to the fact that membership in this Association is annual in the very narrowest sense. To a very large extent, only those who contribute to the funds of the Association put in an appearance at the annual meeting. Thus the membership is by no means a constant quantity and to this, and to the same extent, the corporate life of the Association is feeble. More ought to be done to insure the continuance of individuals from year to year.. To this end Dr. Blackader's proposal that the transactions of each succeeding year be printed in a separate volume, is a step in the right direction. If the Association can present something tangible to its members, those members will be more willing to be permanent contributors to the funds than if the yearly meeting is the sole evidence of the Association's work and vitality.

THE

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Original Communications.

THE PHYSICIAN AND HYGIENE.

INTRODUCTORY ADDRESS AT THE OPENING OF THE MEDICAL FACULTY, McGILL UNIVERSITY.

BY

E. P. LACHAPELLE, M.D.

Chevalier of the Legion of Honour, President of the College of Physicians and Surgeons of the Province of Quebec, President of the Provincial Board of Health, Professor of Hygiene in the Faculty of Medicine of Laval University.

Mr. Dean and Professors, Gentlemen Students:

The Medical Faculty of McGill, in extending to me the invitation of addressing you to-day, has conferred upon me, a great honour, for which I desire to tender my most cordial thanks; it was, no doubt, the intention also of this faculty to give Laval University, to which I belong, a token of friendship and esteem, and this, above all, calls for the expression of my gratitude. Consequently, I could not decline the kind invitation, though the lack of facility with which I express myself in English, strongly prompted me to do so. However, I prefer to sacrifice my reputation as a linguist for the pleasure of accepting this invitation, feeling confident from the outset, that I may rely upon your greatest indulgence. I trust that you will overlook any errors of language and take into consideration my good will only.

The profession, gentlemen, which you intend to embrace, is one of the most elevated. Composed of study, work and devotedness, the physician's career is not devoid of grandeur and nobleness, since his aim in the practice of his profession is both lofty and humane, the soiacing of suffering humanity. His place of predilection is at the bedside of the sick; day after day, the wounded and the afflicted throng into his office; his best friends are the feeble and the forsaken.

In him, both science and kindness co-operate to enable him to dress

and heal the wounded, to prolong life; and the happiest moments of his existence, his hours of triumph, are the victories won at death's door. Yes, a physician's life is really noble and great!

It is here, in this grand university, that you have flocked to prepare yourselves, by lengthy and patient studies, for the career you will be called upon to enter in the near future, that state of life made up of work and self-denial.

Your professors will direct you in the right path; they will teach you the precepts you must know; they will unfold the vast extent of medical science, the more entrancing, the more we fathom it. No doubt you will love the science of medicine, which makes the delight of its faithful followers, and which will open up to you the fields of the unknown. You will study it passionately, in all its branches, thus learning to acquaint yourselves with life and to combat the causes of death.

Of all the branches of medicine, there is one upon which I would like to dwell more particularly to-day, for it will be of constant use throughout your medical career; I am alluding to hygiene. I will endeavour to demonstrate that without hygiene, a physician is unable to fulfill his mission towards society. Hygiene has become a positive science, giving accurate and constant results. This, to a great extent, has been brought about by the progress and achievements of Pasteurian medicine. Hence, the great help it affords the physician in his endeavours to prolong the life of his patients, either by restoring health, when impaired, or still better, preventing disease from endangering it.

Consider for a moment hygiene and the wide field it covers. By alimentation, calisthenics and work, hygiene permits the development of strength and the invigorating of health. By proper diet and well layed down rules for the care of the sick, hygiene enables us to carry them safely through prolonged and debilitating diseases. Moreover, by establishing the rules of prophylaxis, it has, to use Dr. Brouardel's happy expression, rendered contagious diseases *preventable*, and thus affords the best means of protecting health. It may be said that hygiene has lessened the mortality rate throughout the whole world, and a higher compliment cannot be paid to our profession.

In order to fulfill his duties efficiently, the physician must be a firm believer in hygiene. Not only has he to oversee the general hygiene of families, in order to develop therein health and strength, not only has he to adopt special hygiene to each case, but if he does not want to lose his patient, but he has, moreover, in dealing with contagious diseases, to protect public health; this is not the least important of his duties, for according to the well known axiom "an ounce of prevention is worth a pound of cure."

Of all sanitary measures, that of prevention, or prophylaxis of contagious diseases, stands in the first rank; this has been fully verified by facts. It is admitted beyond question, and civic authorities look upon it as the corner stone in the foundation of public sanitation, in all civilised countries. International hygiene has its written laws, and the establishment of quarantine is the natural outcome of armed prevention—a peaceful measure if any—since its sole aim is to safeguard the life of the inhabitants within its limits, but nevertheless, a measure sanctioned by law and to which all travellers must submit.

Great centres of population do likewise in order to protect public health. Municipal hygiene has its rules and regulations which are enforced in every instance where civic authority has a right to intervene. Thus does it look after the purity of the water supply, the cleanliness of the streets, the sewerage system, and proper sanitation of houses, schools and manufacturing establishments, etc. This is as it should be, since its object is to prevent the spreading of epidemics and thus preserve the life of the rate payer.

But if international hygiene, under the control of governments, and municipal hygiene under the control of civic authorities, have created for physicians, positions worthy of the ambition of those wishing to make a speciality of hygiene, it is not for this particular reason that hygiene becomes of prime necessity for the general practitioner. He would certainly not be doing justice to his profession, if he were unable to second the efforts of the sanitary authorities; but it is not at the frontier, not at the city hall, that, in the ordinary course of things, a forcible and effective intervention is expected from him: *Where he must act, is in the home and in the family circle.* Hygiene, be it general, special or prophylactic, will furnish in this instance, as I stated heretofore, the surest means of maintaining health and prolonging life.

Allow me to enter more deeply into the matter.

General Hygiene:—If the health of the masses depends upon international or municipal hygiene, the health of the individual rests entirely upon domestic hygiene, and here it is we enter upon the field proper to the general practitioner.

Domestic hygiene has also its laws, any violation of which would be a source of great peril. The whole community, without exception, must abide by them to preserve their health, to develop and maintain intact their physiological functions. "Life," says Bichat, "is the concourse of phenomena opposing the causes of death." To develop and preserve health, that is, life, is therefore, to increase the power of resistance and is altogether, the best method of prophylaxis. Have we not, for example, obtained splendid results by the proper care of children? It

was sufficient to give the child the proper diet, free from any noxious ingredient, in order to dispel those digestive troubles which so frequently endanger the health and existence of the young organism. The mere sterilisation of milk has done more towards the preservation of infants than all the most highly recommended treatments for gastro-enteritis.

What hygiene has accomplished for children it has also accomplished for adults. I know it is difficult to control the feeding of grown up children, but nevertheless, hygiene must not be excluded from the house, it is on the contrary, in middle age that hygiene is most required. Take any badly heated, badly ventilated, and above all, any badly drained dwelling, and not even the most vigorous can resist. Without the prompt intervention of hygiene, they will soon become a prey to anæmia and cachexia, in spite of all the chalybeate or other tonics you might prescribe. Diet, in all ages, will have to be regulated by wise and well established measures, to prevent complications arising from alimentary intoxication, and serious disturbance of nutrition due to repeated errors of diet, finally degenerating in gout, obesity and Bright's disease. And while you will unsuccessfully try upon your patients the limited resources of a seldom effective therapeutic treatment, they will, if ever better enlightened, bitterly regret the advice which you have not given them, and which might have induced them to be more careful. And what will I say of the old man whose arteries are encrusted with the rust of arterio-sclerosis, and whose least transgression means cerebral apoplexy? Would not a proper diet, regulating intestinal functions and preventing ptomain formation, be worth a hundred times more than the best attendance, once his brain is furrowed by a severe hæmorrhage?

Hygiene is required at any and every age, and tends to promote happiness and comfort in the family circle, more so than luxury and expenditure. How often will you not be consulted upon this subject? Will you always be ready to answer? Let us hope so, gentlemen, if you have at heart the fulfilment of the duties incumbent upon your calling. Upon you only will devolve the solution of these problems. In this respect you are the natural adviser of the family, its best friend. Teach your patients to appreciate your advice; you will be looked upon as belonging to the inner circle of the family, and called to share to a certain extent its home life; and you will be no longer considered as the dreaded being who only crosses the threshold, treading in the footsteps of disease, and whose presence seems the forerunner of death.

Special Hygiene:—I, by no means, intend to convey the idea, that the physician's relation towards his patient is to be despised. It would not

be doing justice to the invaluable services rendered at all times by our distinguished physicians. However, I will firmly maintain, without fear of error, that therapeutics cannot depend solely upon materia medica; because, even in his character of healer, the doctor cannot dispense with hygiene. A patient under the treatment of drugs alone would only be half treated, it would be doing away with the salutary results of nursing, so essential to his welfare.

You will give great care during the University course to the study of medicine, materia medica and therapeutics, and will be shown in clinics a great many diseases treated according to the most rational methods. I can foretell that you will be surprised to ascertain how few diseases have specific remedies and how often the treatment must be symptomatic. We are greatly indebted to bacteriology for having so thoroughly made known to us the means of defense of the organism and for having proven that, in the great majority of cases, the stimulation of the natural body defenses must be the physician's first attempt at treatment. Even here, hygiene will render you incalculable services, and will not only enable you to stimulate the nerve centres, those great regulators of human physiology, but will moreover, oxygenate the blood and give increased activity to the emunctories. This sums up physiological defense. Ventilation of the sick room, open air treatment, hydrotherapy are hygienic treatments, without equivalents in the most elaborate treatise of pharmaceutics.

How many of the gravest chronic maladies are beyond the reach of materia medica. For instance, what drug would you give in the treatment of an arthritic diathesis? What remedy would you prescribe in the treatment of cirrhosis of the liver, of sclerosis of the spinal cord, or Bright's disease? What specific would you administer for dyspepsia? However, the lesion exists, the patient's life is threatened. Is is not here that hygiene will help you the most, and by rest and diet, delay for an indefinite period the fatal ending of an incurable disease?

A mitral lesion cannot be restored, but the hygiene of the heart will have the good effect of maintaining compensation and postponing indefinitely the indication for digitalis.

In cases of acute or chronic disease, I repeat it, hygiene has its place. Without it, treatment would be necessarily deficient, and even alone it may avert the ill-effects of an organ unable to perform its functions. It is owing to an efficient hygiene, rather than drugs, that we are enabled to prolong the life of patients.

Prophylactic Hygiene:—But if hygiene, gentlemen, figures only as secondary in the treatment of inflammatory and chronic diseases, its prescriptions take the lead in cases of contagious diseases and the reason

is, that here the danger becomes general. The patient himself is not alone threatened, but his family, and the community at large. For the patient, the danger lies in the infectious nature of the disease, exposing him to serious complications, to secondary lesions, to toxæmia, entailing upon those who have the care of him, constant and careful watching, and first class nursing. For the family, the danger is in the possibility of contagion, which may spread to all the children instead of one, incapacitate the adults and the bread-winners, endanger the life of the aged, and convert the home, not only into a hospital ward, but also into a centre of infection. Then the community at large is seriously threatened, since this contagious and infectious disease may spread beyond the threshold of the infected house to the neighbouring dwellings, and find its way to the school, the work-shop, the stores and warehouses, soon to overtake the whole or part of the city, when it is no longer a source of contagion but a centre of epidemic.

If certain contagious diseases, such as whooping-cough, measles or mumps, are rather of a benign nature, who can prodict the extent of the ravages caused by an epidemic of scarlet fever, diphtheria, small-pox, or cerebro-spinal meningitis ? It even often happens, that a contagious disease in a mild form, such as la grippe, gives rise to most serious complications, and spurs on inherent constitutional vices. Finally, gentlemen, you are not ignorant of the frightful ravages caused by tuberculosis, the great scourge of humanity, which creeps insidiously through all classes of society, and is responsible for a fifth of the general mortality of the world.

When face to face with a contagious disease, the skilled physician has a lively feeling of the existing danger and of the responsibility incumbent upon him. He is well aware, that it is no longer a case merely for a prescription to be filled by a druggist, but that there are other steps to be taken. He must not only try to save the life of his patient, but he must also safeguard the health of those surrounding him, be they his relatives, friends, or fellow citizens. For this reason in a case of contagion, a physician imbued with the responsibility of his position, immediately takes preventive measures.

You will have to be familiar with the means of preservation furnished by prophylactic hygiene. You will notice that they are classed under four principal headings :—

(1) Isolation,
(2) Antisepsis and disinfection.
(3) Vaccination.
(4) Notification of the sanitary authorities.

It is needless to further insist upon these points, for it would be go-

nig beyond the limits of my subject; but I beg of you to study with the utmost attention, this part of hygiene, since its application will be of paramount importance in your daily practice. Allow me to insist upon the fact, that the efficiency of these preventive measures has been duly proved. To be convinced of this, we have only to glance at the results obtained in large cities, special establishments, and daily practice. Have not isolation, ventilation, antisepsis and disinfection freed hospitals from septicæmia, gangrene, and erysipelas? Have they not reduced to their minimum, the purulent complications of wounds and operations, and crowned the audacity of modern surgery with the most happy results? Has not cleanliness so completely banished from lying-in hospitals that so much dreaded scourge of parturient women, *puerperal infection*, that all criticism has been silenced? Even more, the benefit of antiseptic prophylaxis has been extended to private practice, and should a case of infection befall you, all blame and responsibility are imputed to you alone, and to no other. Has not the sterilisation of milk so transformed infant asylums that from 90 per cent. the mortality has fallen to 20 or 30 per cent.? Has not typhoid fever been almost banished from the barracks of France, by the introduction of the use of filtered water? Has not vaccination, Jenner's gift to mankind, eradicated smallpox from Germany, and enabled other countries to shear this dreaded contagion from its horrors and place it among things of the past? And since we have broached the subject of epidemics, has not hygiene by the establishment of quarantine, been instrumental in keeping out of the European Continent, cholera and the bubonic plague, or at least preventing its spread beyond certain quarters in sea-port towns? Here is what has been done in England in the battle with pulmonary tuberculosis; by cleaning up the densely populated districts, by carefully supervising the cases of tuberculosis, by disinfecting the contaminated dwellings, and by popularising the notions of modern hygiene in regard to the methods of prevention of this disease, the rate of mortality from consumption has fallen 45 per cent.

The efficiency of hygiene is to-day proven beyond doubt; it is an undisputed fact. The achievements of modern sanitary science are justly appreciated throughout the world, its regulations are enforced everywhere; governments realising the importance of, and the necessity for public sanitation, have taken control of public health, and all civilised countries have special organisations, such as boards of health, quarantine, isolation hospitals, etc.

And what is the reason of all this, gentlemen? The main one, one of humanity and economy—to bring about lowering of the mortality rate. I am at a loss to find a more charitable, a more praiseworthy

motive, which is, you are well aware, the basis of the medical profession, and towards which it constantly directs its efforts. Were you for a moment to lose sight of this, you would not be doing justice to your calling.

No, gentlemen, you will never falter in your duty. Once enlightened and conscientious graduates from McGill University, you will become through conviction, the pioneers of hygiene, anxious to fulfil the duties of your calling, and bearing in mind that hygiene is preëminent among medical sciences you will constantly look to its enforcement in your daily practice. It will prove invaluable for the preservation of the life and the health of your patients, furnishing you with the best weapon against disease.

Discarding all idea of unscrupulous gain, refusing to take as a basis of your calculations the number of patients you will be called upon to treat each year, you will not speculate on the spreading of epidemics, but on the contrary, you will do your utmost to prevent the breaking out of diseases, and your success will be, in your own estimation, your highest reward.

Your patients will look up to you as educators gifted with unlimited authority, and practising what you preach. Thus shall you go through the world, with the confidence and respect of the public, who will consider you, not only as a healer, but as a savant able to prevent danger, and will be all the more grateful to you, since before treating them to prevent their dying, you will have taught them how to live.

These facts, gentlemen, which I have just exposed, are daily acknowledged by the universities, whose efforts tend to foster, to bring up to date and improve the teaching of hygiene, in order to do justice to its importance. McGill University, in this matter as in others, was not to remain behind. Not only has it founded, as in other universities, a special chair for the teaching of this important branch of medicine, but it has, moreover, established special laboratories, museums, wherein you will acquire in its minutest details the practical application of public and private hygiene. Going a step further, and with the view of definitely sanctioning the primordial usefulness of hygiene, your University has inaugurated a special course and grants diplomas for the benefit of those among you having the ambition of becoming experts in hygiene. This calls for the most hearty congratulations; for, by the establishment of these lectures in hygiene, McGill University not only qualifies you the more for the fulfilment of the duties of your profession, but it renders possible in the near future the dissemination of the knowledge of practical hygiene throughout the Dominion of Canada.

ON THE TEACHING OF ANATOMY TO MEDICAL STUDENTS.

INTRODUCTORY REMARKS ON THE OPENING OF THE COURSE IN ANATOMY AT THE MEDICAL FACULTY OF McGILL UNIVERSITY, SEPTEMBER 21st, 1900.

BY

FRANCIS J. SHEPHERD, M.D.,
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After welcoming the new students and the old and giving some good advice, the lecturer then spoke on the subject of "Anatomy as a Science, and Anatomy for Medical Students." He said :—

The physiology of one vertebrate animal is exactly like that of another. Human physiology is not, one would say, specialised. But it is very different with anatomy—the anatomy of the human animal is very much specialised and his anatomy, for obvious reasons, has to be learned for medical and surgical purposes in a more exact and minute way than the anatomy of the lower animals.

Although approving of teaching anatomy from a morphological point of view when taught as a pure science, still, for medical students, with their multitudinous subjects and the yearly increasing amount of new work, a little morphology goes a long way. Of course it adds interest to the course, as does the introduction of comparative anatomy,—it clears up many obscure points and the reason of apparently useless structures is explained. For the more advanced students morphology has its uses. However, to the average students, who find it hard to keep up with the work gone over daily, the essentials only of anatomy should be taught, his memory should not be loaded with useless details, such as the anastomoses of arteries about joints, the minute description of such bones as the palate, wrist bones and many other points which will suggest themselves to the senior student.

It is argued that the learning of such things is a good discipline to the mind, but there are many more important things that may be dwelt on for that purpose. I always hold that the dissecting room is the place where a student should learn his anatomy. In the lecture room he is told how and what to learn, and now-a-days the lecture is more of a demonstration than anything else. The introduction of a beautifully dissected subject is useful to the student after the lecture, but to try and show a large class special points in the dissected subject is impossible. It is in fact a survival of the time when subjects were only obtained at long intervals, and when obtained, all the neighbouring medical

men were called together, and the subject was dissected and demonstrated before them.

Lectures should be demonstrative and explanatory, and should elucidate those points which are difficult to understand; here diagrams, blackboard drawings and lantern slides, are of use, and specimens may be passed around showing the points the lecturer wishes to emphasize. The occurrence of anomalies, the bearings of comparative anatomy and embryology on the points alluded to, should be noted, in order to awaken the interest of the student which is usually dormant.

After osteology, I consider the nervous system and the viscera the most important. A medical student cannot know too much about the viscera, both as an aid to the study of physiology and as the most necessary part of his preparation for the diagnosis and knowledge of disease. He should know the position of the viscera so well that in looking at a patient he should be able to picture to himself exactly how they are lying and what relation they bear to one another, as if in fact he had a skiagraphic eye.

The anatomy of the blood-vessels, save from a surgical standpoint, has ceased to be of such importance as it was. When the chief major operations were the the tying of blood-vessels, special attention was paid to this branch of anatomy, but now that operations are performed daily on all the cavities and their contained organs, the ligature of blood-vessels is not regarded with much dread. Anæsthesia and antisepsis, together with the modern means of arresting hæmorrhage, have relegated the surgery of the blood-vessels to a very subordinate position. Of course it is most important to know all the main vessels and their relations, but the knowledge of the smaller vessels and their anastomoses is not of much importance, especially as it will probably exclude the acquisition of other matters more essential.

Of late years the anatomy of the lymphatics has become more and more important, and the intimate bearing this system has in the spread of malignant disease has been well shown of late by many surgical observers. A knowledge of the situation of the glands, and the course of the lymphatics entering them, is necessary to every one of you who expects to practice medicine and surgery.

The nervous system, within a few years, has much widened in importance from a practical point. The knowledge of diseases of the nervous system has grown apace and operations on the greatest nerve centre, the brain, are not uncommon, and are often brilliantly successful.

The importance of knowing the action of muscles and their nerve supply, need not be dwelt upon, as it is so self evident. So you see there is still a good deal of anatomy that is essential, though many of the older ideas about it have become obsolete.

Still medical students now-a-days have so much to carry in their heads that I feel when teaching anatomy that only such points as will be of real service, and a knowledge of which is absolutely necessary, should be dwelt on with any great minutesness. It is the average students I am now alluding to, for they will form in the future the chief bulk of the practitioners of the country. The fact is, the amount of knowledge that it is necessary to acquire for a medical degree has increased with so great rapidity that impossibilities are often expected, and it is overlooked that the brain power of the student has not increased, *pari passu,* with the amount of knowledge required.

In the dissecting room your work will be supervised by demonstrators and the student will be examined from time to time on the part dissected, and special demonstrations will be frequently given by the various demonstrators to small classes, on the viscera, organs of special sense, brain, etc. The first year student should endeavour to most regularly attend the demonstrations of the teacher to whom he is allotted, and should before Christmas be very familiar with osteology.

Now I wish to impress on you all the necessity for individual work. Rely on your own exertions and find out things for yourselves; verify your dissecting manuals by accurate observation; do not be always running after the demonstrators to have your anatomical work digested for you. Everything you work out for yourselves will be much better remembered than what will be told you by the demonstrators. Feed yourselves! Don't rely on spoon feeding! If you do you will be sure to suffer from anatomical rickets or scurvy. Hear what Solomon says, "In all labour there is profit, but the talk of the lips tendeth only to penury."

In this college histology is taught separately from anatomy or physiology—a questionable proceeding I think—and embryology is an appanage of physiology; however embryology is from time to time touched on in this course in a brief way and the development of blood vessels, organs, etc., is shortly described before discussing the organ itself.

It seems to me that in teaching anatomy to medical students one should always keep in view the use they are afterwards to make of their knowledge; hence, one should not insist on the acquisition of certain obscure and difficult but interesting points of no particular value—it is difficult for the average man to retain even a small part of what he is taught, and for this reason the useful should predominate over the interesting but useless matter. The chief object of all medical teaching it to make the student into a good practitioner, not an anatomist, a chemist, a pharmacist, a biologist or even a bacteriologist. In every class there are certain men of more capacity and industry than others,

these men I am always anxious to encourage and lead into the higher walks of anatomy, and I urge them to make independent investigations and interest themselves in morphology. But to the average man (to whom I have so often alluded in this address), morphology must take the place of something else which is more useful. I often find a student will retain a smattering of morphology of the shoulder girdle while he will fail to answer the simplest question on the liver and brain, and not be able to find the healthy appendix in the cadavre while he can tell all about the labyrinth of the ear.

The longer I teach the more I am humbled and the less pride I have in my capacity as a teacher, and the more I wonder at the small amount of receptivity of the average man ; many apparently absorb knowledge readily, but when squeezed little comes out. Perhaps they might be compared to casks in which the spigot is carefully closed but the bung is left open.

I speak not only as a teacher of anatomy but as a practitioner, one who has daily to apply his knowledge acquired in the dissecting room and one who is also a teacher of surgery in the hospital wards, and I say this, and I wish to impress it upon you, viz : that I and my colleagues are daily amazed at the small amount of anatomy retained by a fourth year man. I am frequently astonished at the gross ignorance of men who did well in anatomy in their second year and who now, when the time has come to apply that knowledge, are weighed in the balance and found wanting. I wish to impress upon you the importance of retaining all the practical knowledge of anatomy you can. When you have passed your second year examination, don't, pray, throw away your anatomy as you would a coat on the approach of summer ! Remember that winter will come when you will need your coat, or that the hospital wards will have to be attended, where in the diagnosis and treatment of disease you will want all the anatomy you have ever learned. I never yet met any man who knew, or thought he knew, too much anatomy. So endeavour all you can to keep up the most practical parts, at any rate, of your anatomy.

I have conversed at medical meetings and other places with numbers of intelligent and thoughtful practitioners, and their daily regret was that they had not more time when at college to devote to the practical study of anatomy, or that they did not more fully take advantage of the opportunities that were offered them. This question of time for practical anatomy is becoming yearly more important, for with advancing science, new subjects (and the newest are always the most important) are constantly cropping up and old ones are developing, and more and more demands are made upon the student at the expense of anatomy.

It is sad to think of anatomy being pushed into the background, but so it is. The study of the most practical and daily useful of all subjects to the practitioner of medicine, is having less and less time given to it, notwithstanding the extension of the courses.

The experience of years has considerably modified my views as to the teaching of anatomy. Teachers of anatomy now in the most modern medical schools are too much specialised, as are the teachers in the other primary subjects, and though it is perhaps heresy to say it, if pure anatomists would take an occasional hospital course, it would do them good and give them much insight into the needs of medical students.

I beg of you all to make the best use of your privileges and opportunities while you may, be thorough in all you do; do not slur over your work, and do not work for examinations only, for they are not the end of all things—work to know the subject and then you need have no fear of examinations.

THE TREATMENT OF CANCER OF THE FEMALE BREAST.*

BY

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It is, I am sure, quite unnecessary to quote statistics to convince men who are actively engaged in the practice of medicine, of the prevalence of cancer of the female breast, of the suffering and great mortality which it causes, and of the frequency of recurrence after its removal. And this, too, in spite of the fact that enormous advances have been made during the last quarter of the century, in the knowledge of what we may call the natural history of cancer, and of its surgical treatment. Indeed, at the present time, the tendency is rather towards complacency than towards dissatisfaction and unrest, with regard to the treatment of cancer of the breast; and to a certain extent this is justified by the excellent results which are obtained by well conducted operative treatment, in the ordinary run of cases which come to the hands of the surgeon. Most physicians, however, will admit that there is yet much to be desired in the general results of treatment, and will readily recall cases in which their best services have been but futile efforts to relieve suffering, and encourage resignation to a hopeless issue. The question is, therefore, well worthy of our serious consideration:—Whether or not something more cannot be done for these unfortunate sufferers.

The present status of the subject may be briefly stated in the following propositions:—

(1) That cancer is primarily a local disease, extending, (a) by infiltration, (b) by extension along the lymphatics, and (c) by metastasis. Of all these methods of extension, that by the lymphatic vessels is by far the most important. It has been shown (*vide London Lancet, 1892,* Watson Cheyne), that the lymphatic vessels from the mammary gland converge towards the areola, and that cancer extends along them, and is carried thence by the cutaneous lymphatics to the axilla; and Heidenhaim has shown that cancer also extends from the deeper portions of the gland along the lymphatics lying upon the pectoral fascia to the glands in the axilla. These facts are in accord with clinical observation, and all observers agree that when cancer develops in the mammary gland, there is in all, or, at least, in nearly all cases, a very early invasion of

* An address read before the Medical Society of Nova Scotia, at the Annual Meeting held in Amherst, Nova Scotia, July 4, 1900.

the axillary tissues ; and operators rarely fail to find cancerous glands in the axilla, even when the most careful examination before operation, fails to show any evidence of such invasion.

(2) That the only treatment which offers the patient any hope, is removal of the growth, which should be early and complete, extirpating the whole of the infected structures by incisions through the healthy tissues, beyond the remotest extensions of the disease. (The development of serum-therapy gives us ground for hope that some day cancer may be a curable disease, but up to the present time we have nothing but operative treatment to rely upon ; all other so-called methods of treatment may be ignored).

For thorough removal by operation, the minimum requirements, whatever form the incisions may take, or in whatever order the steps of the operation may be carried out, are wide and deep removal of the tissues surrounding the mammary gland, the underlying fascia, and superficial layer of the pectoralis major muscle, at least, and the whole of the axillary lymphatic and cellular tissue. In many cases it is necessary to remove the greater, or even both, pectoral muscles; and, indeed, many surgeons consider this step always necessary; and in any case the operation must include all diseased lymphatic glands in the posterior triangle of the neck and along the subclavian vessels.

Portions of the bony wall of the chest have been removed, but there is a limit to this procedure, and it can never be either very safe or very satisfactory. Up to this point we are upon safe ground, and when such an operation can completely circumscribe the diseased tissues, as it does in a large proportion of the cases which are operated upon, there is nothing further to be desired, but, in many of the advanced cases, the surgeon feels when the operation is completed, that although all diseased tissues, recognisable to the senses of sight and touch, have been removed, he has been compelled to dissect masses of cancerous growth from a perilously close relation with the walls of the axillary vessels and the cords of the brachial plexus. In short, he feels that if it had been possible to have removed these important structures without destroying the functions of the arm, he would have done so. Portions of the vessels may be removed, but to seriously wound the brachial plexus is to leave a painful and useless member, which can only be a burden to the patient.

Local recurrence in the axilla is, therefore, not uncommon, the first indication being œdema or lymphœdema of the arm and forearm and brachial neuritis. From this focus, extension into the neck and along the subclavian vessels occurs. Recurrence in the chest wall, and extension by the lymphatics through the intercostal spaces to the mediastinum, is much less common.

The obvious deductions are, therefore, if the case has been fairly stated :—

(1) That a sufficiently early operation will effect a cure in the best sense of the term, and

(2) That in certain of the more advanced cases, an operation which would remove all the axillary structures, including the bloodvessels and the brachial plexus, from the level of the first rib outwards, would effect a cure in many cases in which after any lesser operation, early recurrence, and hopeless, miserable, distressing and painful invalidism for a short time, is all that remains for the patient.

It is to these two propositions which I wish to direct your attention.

(1) *Early Operation.*—Early operation implies early diagnosis; and, while operation is simple in proportion as it is undertaken early, diagnosis becomes more and more difficult under the same conditions.

There must always be a time when cancer is present but not recognisable, inasmuch as it gives rise to no symptoms in its early stages, and produces no objective physical signs, until some new growth has taken place and an enlargement can be detected. On the other hand, when a diagnosis can be made with tolerable ease and certainty,—when the classical signs and symptoms described in text-books and monographs are present,—the disease has already reached a considerable degree of development, the axillary glands are almost certainly infected, the operation for its removal must be extensive, and recurrence after removal is no longer an improbability. It is, therefore, of the utmost importance to make a diagnosis before this stage of development has been reached.

I believe that women as a rule detect very early any deviation from the normal condition of their breasts. Modesty and dread of operation, and perhaps, other causes, often impell them to keep this knowledge to themselves for considerable periods of time, but, if I may judge from my own experience, women who do consult a physician, in these very early beginnings of disease of the breast, often get very little satisfaction. The symptoms complained of are either explained away in an off hand manner, or the patient is given tincture of iodine to paint with, or an ointment to rub into the skin over the breast, her well-grounded fears are allayed or dissipated, and she is lulled into a feeling of false security, from which she will probably receive a rude awakening a few weeks or months later.

I do not underestimate the difficulty of making a diagnosis at this period, I only wish to emphasize the importance of endeavouring to do so. In fact, a positive diagnosis is impossible before certain well-recognized signs have appeared, but, in my opinion, every mass or growth in

the breast of a woman over twenty-five years of age, which cannot be clearly diagnosed as a cyst, abscess, fibro-adenoma, or of inflammatory origin, should be looked upon as a *possible* (I would almost say, probable) cancer, and serious special efforts should be made to come to a positive diagnosis. Among these serious special efforts I would include even an exploratory operation, if necessary.

A simple incision will detect a cyst or a chronic abscess, but if the simple incision does not make the diagnosis clear, I do not hesitate to advise the removal of the whole breast, with the understanding, that if a microscopic examination shows evidence of cancer, a more extensive dissection will follow within a few days. And if in serious doubt, I do not hesitate to recommend as wide removal as if I were certain of the diagnosis, even though the microscope may subsequently show that the disease is not malignant. The plan of having frozen sections examined while the operation is in progress, is not to be relied upon, as unless a positive result is obtained, it may very well be that a more extended examination of the whole breast will show evidences of cancer, when none can be found at the moment from the small portions removed for that purpose.

The following case which came under my care about five years ago (October, 1895), furnishes a good illustration of this fact, as well as of the difficulty of diagnosis.

This patient was an unmarried woman about fifty-five years of age, spare in build, but with good general health. Both breasts were enlarged by some form of new growth. The enlargement of the left breast had been first noticed about five years prior to my seeing her and, at the time of my examination, enlarged lymphatic glands were distinctly palpable in the axilla. The enlargement of the right breast had been first noticed three years before I saw her, and there was no evidence of enlargement of the axillary glands. A diagnosis of double mammary cancer had been made, and the patient was much depressed. For many reasons I doubted this diagnosis and advised operative measures, primarily to settle the question of diagnosis, and besides, as the proper treatment for the condition, if it were cancer. I arranged to remove the left breast and the axillary tissues (on account of the glandular involvement), but attempted to settle the diagnosis while the operation was in progress by the examination of frozen sections, in order that I might, in other respects, make the operation more or less radical, according to the results of the microscopical examination. The latter failed to discover any evidence of cancer, although the tumour, on section, had a very suspicious appearance. Further examination of the removed breast made it quite clear that it was cancerous. On the strength of

these facts the other breast was removed a couple of weeks later, in the belief that it too was cancerous, and careful examination showed that it was. Recurrence was noticed in the *left* axilla in the following September (1896), and two small masses were removed from beneath the pectoral muscles. This did not arrest the progress of the disease, and the patient died in January, 1897. This, it will be observed, was the breast first operated upon, under the belief that the disease was *not* malignant, a belief which was confirmed at the time by the negative result of immediate microscopical examination. It is probable, too, that, acting upon this belief, the removal of the axillary tissues was not as thorough as it should have been—hence the early recurrence ; while the right breast, which was removed after the diagnosis had been made and in the belief that the disease *was certainly* cancer, showed no signs of recurrence.

I would, therefore, urge that no breast tumour be looked upon lightly, when there is even a remote possibility of its being cancer (or sarcoma, for, of course, these remarks will apply to sarcoma as well as to cancer). By following the course which I have advocated, we may perhaps suffer in reputation and be called "alarmists," and suffer from the misrepresentation of having diagnosed cancer, when we had only discussed the possibility of it; but our aim must always be to bring disease under control, and to benefit the patient and the public; and the results of such efforts will be the education of the public and the profession as a whole to an appreciation of the value of an early diagnosis, and the risks of delay in recognising such a serious disease. In this way many valuable lives may be saved and much suffering averted.

In spite of all precautions, however, there will always be a considerable number of women with cancer of the breast, who, for one reason or another, do not present themselves for operation until the disease is far advanced,—so far advanced, indeed, (in the axillary tissues) that no operation, no matter how extensive and thorough, which stops short of sacrificing the upper extremity, can hope to effect a permanent or lasting immunity from recurrence, (as already indicated in an earlier part of this paper).

And why should not the upper extremity be sacrificed in such cases, if such sacrifice offers the hope of saving life at the cost of a member ? The advantages of an operation, which removes not only all the contents of the axilla, but its muscular boundaries as well, and gives the best possible access to the cervical lymphatic glands, are obvious; and the principle is universally adopted in surgery,—that no organ or member is sacred from removal, if its removal offers the hope of saving life. One has only to recall the appearance of the cadaver in the dissecting room,

when the upper extremity has been removed, to be convinced of the truth of this assertion. The operation of interscapulo-thoracic amputation is in itself scarcely more serious than the more extensive operations for removal of the breast as at present conducted, and, moreover, no one ever hesitates for a moment to advise this operation for other conditions, such as sarcoma of the upper portion of the humerus or of the scapula, or for gunshot wounds about the shoulder blade, etc., provided of course that there are no special contra-indications to the operation.

A few cases are recorded in which the arm has been sacrificed as a part of the operation, to ensure a thorough removal of the diseased tissues in the axilla (W. Arbuthnot Lane and Rutherford, *Lancet, Vol. II., 1895, pp. 904 and 1190*), but the principle does not seem to have been at all generally adopted. On the contrary, the tendency on the part of surgeons seems rather to be to place too much reliance upon a close dissection of the axilla; and the proposition to remove the arm, does not meet with a ready acquiescence by the general practitioner, who, to a very great extent, influences the mind of the patient. I do not wish to convey the idea that this should become a routine procedure, because in the great majority of the cases it is unnecessary, but I do feel that we should not allow our minds to become closed to the possibility of saving life by this means when it is impossible to do so by any other.

Looking back upon my own personal experience, I can recall several cases in which I think that I might have averted recurrence in this way. Recurrent cancer in the axilla may of course be treated in the same way but, unfortunately, by the time that such recurrence has been recognised, there is very frequently extension to the mediastinum along the subclavian veins or through the intercostal spaces, a condition which is beyond the reach of any operation. Quite frequently, indeed, as a rule, one cannot tell, before opening the axilla, whether this serious step will be necessary or not. I would, therefore, advise that in primary operations, the operation should be proceeded with in the ordinary way until the exact condition of the axilla has been determined, and then, if necessary (the patient's consent having been previously obtained), an interscapulo-thoracic amputation, modified as regards the skin flaps, etc., proceeded with.

I have, during the last four years, endeavoured to carry out this plan, but I have always found that whenever the operation was necessary, the patient, through an exaggerated dread of the danger and the mutilation, refused to allow the removal of the arm. This objection would, of course, be overcome in time, as the objections to all other formidable and mutilating operations have been overcome in the past.

In dealing with recurrence in the axilla, a typical interscapulo-thoracic amputation may be planned from the outset, just as in dealing with a sarcoma of the humerus or scapula. I do not wish to be understood as adopting a hypercritical attitude towards the methods generally employed in dealing with advanced cancer of the breast, but I can not admit that the last word has been spoken on the subject, and I cannot help thinking that the tendency is too much in the direction of slavishly following the lead of eminent surgeons, and thereby falling into methods of too routine a character.

In my opinion, the treatment of cancer of the breast at the present day is eminently creditable to surgery. My plea is for an extension of the benefits of surgical treatment in two directions, viz., to the earlier beginnings of cancer, when we may hope to effect a real and permanent cure without serious mutilation, and to the unfortunates, whose condition is already bordering on the hopeless. In only one class of the latter cases, where the danger is from the disease in the axilla, can any thing be done. We cannot, as practical surgeons, follow the disease beyond the bony chest wall, but I have no doubt that a more frequent performance of the operation up to this extreme limit, would yield the most beneficial results.

I am aware that there is nothing new in the suggestions which I have made, but I have reiterated them in the hope that they may stimulate to greater diligence in early diagnosis, and to greater daring in the treatment of the disease in its later stages.

EXCISION OF THE KNEE-JOINT IN TUBERCULOUS DISEASE.*

BY

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The treatment of tuberculous disease of the joints presents difficulties which are often not easily overcome. Of late the methods adopted in the surgical management of these conditions have been completely revolutionized. During the past few years there is no class of diseases in which the progressive surgeon has had to change or modify his methods of surgical treatment more frequently than in that of tuberculous arthritis. The explanation is to be found in the fact that the pathology of this affection has been better understood, the clinical course both before and after operation has been more carefully studied, and there has been a wonderful improvement in the technique of surgical interference. We do not assume that we have yet learned the best methods of treatment, but we must continue our study here, as in other branches of surgery, in the spirit of that most progressive of all British surgeons—John Hunter—who, when Astley Cooper asked him whether he had not the year before stated an opinion on some point directly at variance with the one he had just put forth, replied: "Very likely I did. I hope I grow wiser every year," and of whom also it is stated that he remarked to a pupil on one occasion, "You had better not write down that observataion for very likely I shall think differently next year."

Sir Astley Cooper, more than half a century ago, must have had some prophetic insight into the future regarding the surgery of the knee-joint when he wrote regarding that articulation : "Recent experience appears to encourage the expectation that after an articulation has been laid open by violence, nature, aided by judicious treatment, may speedily produce such an alteration in its conditions as shall prevent, or at any rate diminish that excessive and almost fatal degree of constitutional irritation which has generally been considered the inevitable consequence of such lesions." Whilst, it is true, these remarks were made regarding injury to the joint, yet they indicate the views held by surgeons at that time regarding the all but fatal consequences of opening the knee-joint. Sir Astley Cooper anticipated better results for the future, and, had he lived until our day, he would have realized his expectations; the methods of Lister permit us nowadays to open the knee-joint with impunity, and it is the antiseptic method of dealing with our wounds which has completely revolutionised our procedure in this as in all other fields of surgery. Arthrotomy is practically devoid of dan-

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ger and we unhesitatingly open the knee-joint when indications present themselves for so doing.

The indications for operative procedure in our treatment of disease in the knee-joint are various. I think it is conceded by all that in the early stage of knee-joint disease, at all events of the primary synovial type, rest is the proper treatment. This must be obtained on a suitable splint, and must be combined with open air life and proper constitutional treatment. There are, however, certain cases, more particularly of those in which disease has occurred primarily in the bone, which demand early operative interference. The operative procedure in such cases constitutes what is called in our present clumsy nomenclature "Partial" or "Complete Arthrectomy;" the latter term expressing the procedure if the whole of the diseased tissues be removed. In my own practice I have thus been able to remove such localised foci of disease. In different cases I have removed localised deposits of tuberculous disease from the internal and the external femoral condyles respectively, and again, from the head of the tibia. In the hip, similarly, I have removed disease from the neck of the femur without opening the hip-joint, the disease having been reached by entering the bone from the external surface of the great trochanter. I operated successfully in this way in a child 12 years of age some years ago, and succeeded in eradicating the disease. More recently, I thus removed successfully disease from the great trochanter and the femoral neck in a man 57 years of age. The operation is, however, more applicable to the knee than the hip, because the bony points are more superficial and therefore more accessible, and, in my experience, is attended with excellent results. If, however, one is dealing with diffuse synovial disease, and one finds that the disease is progressing in spite of rest and appropriate constitutional treatment, then one must open the joint and the operation must not be delayed too long. When these conditions present themselves and we decide to operate, we are often quite incapable of predicting the extent of involvement of the tissues of the joint, in fact, we are often far astray in the conclusions we form from an external examination merely, and when the joint is actually opened we frequently find much more extensive disease than we had anticipated. This being the case, we wish to employ a method of opening the joint of such a character that, with the least possible damage to the essential parts of the joint structure, we may explore the joint thoroughly; we may find it unnecessary to do more, and we thus content ourselves with a simple urthrotomy, on the other hand the conditions of disease may warrant our proceeding to a partial or complete arthrectomy, or we may resect the joint, or amputate the limb.

The conditions which must be fulfilled in the ideal operation are,

that the primary incision should be so planned, that it will be efficient either for simple artrotomy or may be utilized for the more radical measures if found necessary. Many suggestions have been made and carried into practice by various surgeons, but the operation which appeals to me as fulfilling these conditions most adequately is that introduced by Kocher of Bern—the operation described by him as resection by external "hakenschnitt." I may say at once that my recent experience with this operation has been my main inducement in writing this paper. The operation permits one to open the joint for exploration merely, or one may proceed at once to arthrectomy, excision or amputation.

The operation of excision of the knee-joint was apparently first performed as a definite procedure by Park of Liverpool, in 1781. Since that time various methods have been practised. The method which has been, and still is, most universally employed, is that by a curved incision with the convexity downwards, the centre of the incision crossing transversely the ligamentum patellæ. The flap is dissected up, the ligamentum patellæ being divided, and the joint is thus, by a very simple means, exposed and excision is readily proceeded with; free access to the joint structures being obtained. If we are certain before hand that complete excision is absolutely necessary, then the operation which I have alluded to cannot be improved upon. I operated in February of last year on a patient, 20 years of age, in this manner with excellent results. There has been firm bony anchylosis and he is walking about freely on the limb, although the disease was so extensive that a large amount of bone was excised, leaving him with nearly three inches shortening. There are many cases on record which show that after similar operations excellent results are obtained, and these results are permanent. Thus, Johnathan Hutchison records several such cases, one of these, 20 years after operation, reported that he had led an active life as a sheep farmer in Australia, and had had no trouble in the knee operated upon. The patient was 12 years of age when operated upon. Another patient upon whom he operated reported, after a similar period of 20 years, that he too had led an active life, he had walked across England and Wales, walking 25 miles a day; he could swim, skate, play tennis, ride on horseback, etc. This patient had been operated upon when a boy. Another case similarly successful had reported 13 years after operation which had been performed when the patient was 11 years of age. In all these cases firm bony anchylosis had taken place. No better results could be obtained.

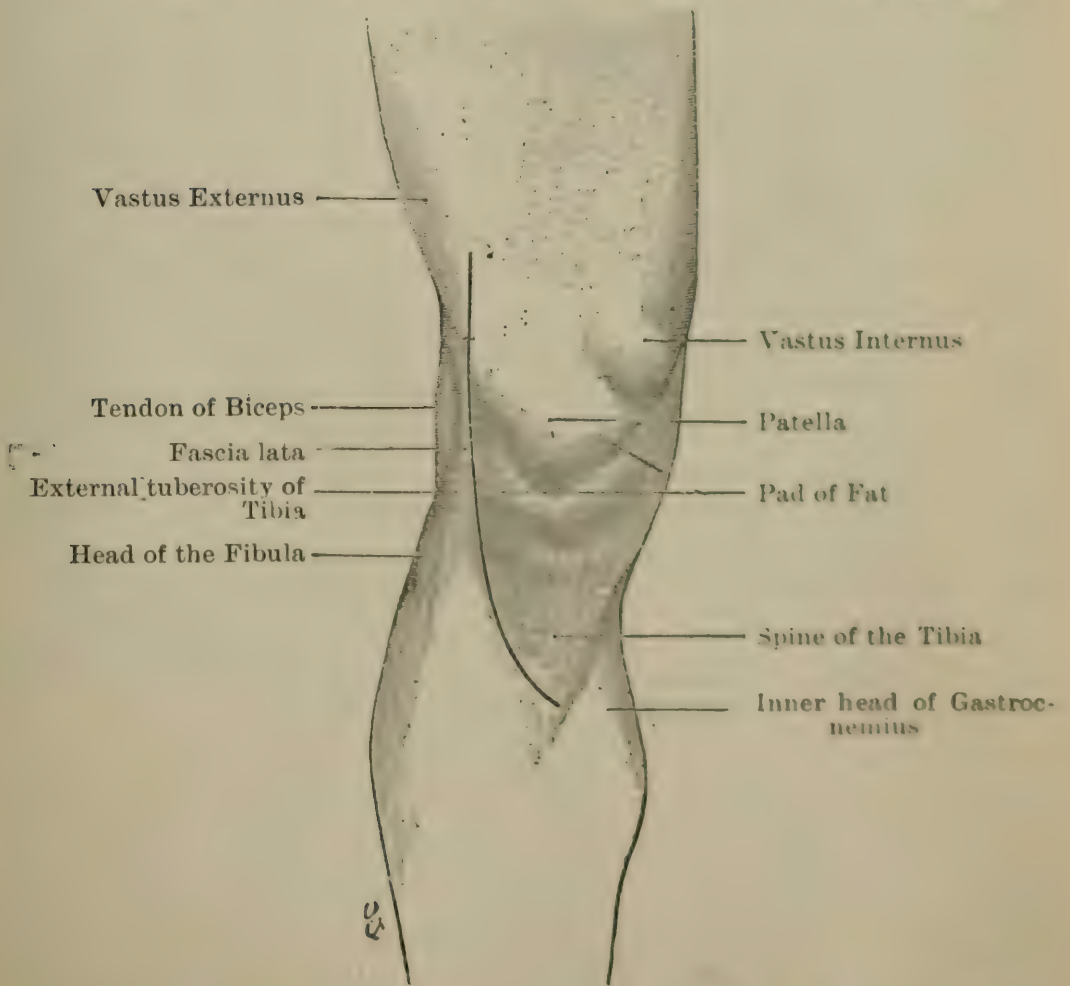
Some surgeons recommend something short of complete excision (arthrectomy) in suitable cases. Whatever may be said in favour of this procedure in children, I think that in the adult where we have

opened up the joint and we find that in order to get rid of the disease we must interfere materially with the joint structure, we should in such cases proceed to do a complete resection of the joint, thus securing firm bony anchylosis. Otherwise we are pretty certain to have an unstable joint with deformity. We should in these cases aim at firm, osseous union, and by this means we shall obtain the best result.

Occasionally, however, the disease may be completely eradicated by arthrectomy and a useful, movable articulation may be obtained. This is particularly the case in children, and in them there is the further advantage, in such operations as stop short of excision, that the epiphyses are preserved and there is the possibility of further growth of the limb, whilst after excision growth in length of the limb is not likely to occur as the epiphyses are in all probability destroyed, although, as I shall presently show, an attempt to save epiphyses should be made in many cases even in complete resection. Where, then, we propose to do arthrectomy and aim at obtaining a movable joint, the ordinary incision, cutting across the ligamentum patellæ transversely is not to be recommend. Kocher states as his conviction, and we agree with him, that if we are to preserve a useful, movable joint, the essential thing is to prevent injury to the extensor apparatus of the joint. The structures on the anterior aspect of the articulation must be left intact. This result is obtained if we are able to follow Volkmann's plan of procedure, a method which was also suggested by Golding Bird—I refer to that of opening the joint by making two vertical incisions, one on either side of the patella, and subsequently joining these by a transverse one, sawing through the patella transversely and thus opening the joint. A few years ago I thus operated on a lad 13 years of age who had suffered from trouble in the knee for four years previously. I found it necessary to remove the synovial membrane which was extensively affected; it was necessary also to sacrifice the crucial ligaments and to divide the lateral ligaments. The cartilage over the external femoral condyle and the corresponding tibial condyle were eroded, and a considerable excavation had to be made in the bone in these localities. A small cavity in the patella was similarly treated. Iodoform emulsion in glycerine, 10 grs. to the ounce, was rubbed into the wound, two silver wire sutures were put in the patella, and the wound closed without drainage. The limb was put in plaster of Paris and the first dressing was done 6 weeks after, when the silkworm gut sutures, which had been used, were removed. I saw the lad a few weeks ago and he is walking with scarcely a perceptible limp and little or no deformity of the knee. Firm, osseous union had occurred in the patella, and the result is that the extensor apparatus remains intact. But it is often impossible because of disease to preserve the patella or a

sufficient amount of it to obtain bony union in the manner indicated. It is in such cases that the operation of Kocher commends itself as the most useful procedure with which we are familiar. Before describing Kocher's operation let me state this further argument in favour of arthrectomy in children, that, even if the result is not all that we would desire in getting a good, functional, movable joint, free from deformity, yet, by arthrectomy, it may be possible to get rid of the disease; and with the epiphyses intact, we may tide the child over the period of active growth and, if necessary, we may operate, subsequent to that period, for any deformity that may be present and thus prevent much shortening of the limb. Even partial arthrectomy may be admissable under certain circumstances in children, as Cheyne has shown, rather than remove essential portions of the joint structure. The effect of partial removal of the disease in this way may lead to a complete cure or, short of this, it may tide the patient over the active period of growth.

Kocher preserves the extensor apparatus of the knee by making a vertical incision along the outer side of the joint as shown in the accompanying cut.



Kocher's incision for arthectomy of the knee-joint. (The cut is reproduced from Prof, Kocher's "Chirurgische Operationslehre," 1887 edition.)

The section begins over the vastus internus, a hands breadth above the upper margin of the patella, and passes first perpendicularly downwards upon the outer side of the patella, separated from that bone by two fingers breadth; below the patella it is carried with a slight curve inwards and ends on the inner surface of the tibia, having passed beneath the tibial spine. The skin is divided, and a transversely coursing vein. This exhibits in the bottom of the wound a very strong fascia with fibres descending obliquely downwards and forwards. This fascia is divided, and will be found specially thick in its lower part. In the upper portion of the wound there will appear the lateral margin of the vastus externus muscle which must be divided, below this is the outer surface of the joint capsule, whilst in the lower end of the wound will be found some fatty tissue and the lateral margin of the ligamentum patellæ, below this one cuts directly upon the bone as one passes beneath the spine of the tibia. By means of the chisel one proceeds to separate the tibial spine with the periosteum and the attached ligamentum patellæ, thrusting it towards the inner side. On cutting through the vastus externus, one exposes the external condyle and opens up very freely the recess under the quadriceps extensor cruris. Anteriorly, in the line of the joint, one separates the external semilunar cartilage from the anterior attachment of the crucial ligament and defines externally the tibial margin below the meniscus, separating the joint capsule along with the periosteum close to the external tuberosity of the tibia. One draws inwards with sharp hooks the ligamentum patellæ, and pulling this to one side, one separates the anterior attachment of the crucial ligament from the internal semilunar cartilage, the capsule together with the periosteum being separated, as on the outer side beneath the meniscus from the cartilaginous internal tuberosity of the tibia. Now one can dislocate the patella inwards. By more and more flexing the joint and loosening the capsule from the tibia below internally and externally, extreme flexion can be obtained. Now one must sever the attachment of the crucial ligaments from the intercondyloid eminence close to the bone, and from the posterior attachment of the meniscus. These, with the crucial ligaments, will be separated from the tibia to the posterior margin of the bone.

If one must now go on to complete resection, then the crucial ligaments must be separated from the intercondyloid fossa of the femur. So that these, together with the meniscus, the posterior wall of the capsule and the periosteum, remain in a mass situated posteriorly and still attached to one another. The capsule must then be dissected off the femur. When the lateral ligaments are to be preserved, they must be separated from the epicondyles subperiosteally, and the femur is

then sawn with a convex surface, and the tibia with a concave surface, after similarly loosening the capsule with the periosteum from its posterior margin.

If the bone is more deeply diseased, then the capsulo-ligamentous attachments must be subcortically separated for a correspondingly further extent. Kocher advocates the use of the chisel in separating the periosteum and capsule, especially from the femur. By this means he removes a cortical portion of the bone after the manner of König. The separation is carried as far back as the line of the saw cut.

I have performed this operation twice recently and am satisfied as to its utility. My first case was in a girl, 15 years of age, who had suffered from disease in the knee-joint for four years previously, and there was evidence of extensive disorganisation of the joint structure, and matters were becoming worse in spite of appropriate treatment by rest. I employed Kocher's incision and dissected out the synovial membrane; the semilunar cartilages were almost completely destroyed by the disease and were removed; the crucial ligaments had to be sacrificed also. A carious cavity was excavated from the head of the tibia—from the outer tuberosity. Emulsion of iodoform was rubbed into the wound and a single silver wire suture having been inserted in the tibial tubercle, the edges of the wound were united by silk-worm gut sutures and the limb put in plaster of Paris. A slight amount of suppuration occurred before the wound finally closed, but the final result was excellent.

My second case was that of a man, 28 years of age, who had suffered from tuberculous disease of the knee-joint for some 15 years previously. The trouble had become more aggravated of late and, on my advice, he determined to undergo operation. There were no open sinuses nor had there ever been. On examination, it was evident that there was extensive disease of the joint with envolvement of the ligamentous structures. The tibia was dislocated backwards. On opening the joint by Kocher's incision, I found the semilunar cartilages destroyed and there was extensive erosion of the articular cartilage of the femur, tibia and patella. A pocket of pus, containing about one ounce, existed behind the outer tuberosity of the tibia. I proceeded to perform complete excision of the joint. The articular portion of the patella was sawn off and the articular portion of the femur was sawn so as to leave a convex surface, and that of the tibia so as to leave a concave surface. Iodoform emulsion was rubbed into the wound and sutures of silk-worm gut inserted. I followed Kocher's suggestion in inserting certain of these sutures deeply, so as to hold in place the detached tibial tubercle and the other deep structures in the wound, a suitable dressing and a plaster of Paris splint was applied. The plaster was removed on the

12th day and the stitches taken out. The patient still wears the plaster splint. The wound has healed kindly and the pain, which was endured previous to operation, has entirely disappeared.

These two cases have convinced me that Kocher's "Hakenschitt" is a very great improvement over the older methods of operating. As far as I am aware the operation has not hitherto been described in the English text-books or periodicals, and I have therefore thought it worth while publishing a detailed description of the procedure. It is a very simple operation, gives free access to the joint, and the incision is so planned that one may utilise it for simple arthrotomy or, if necessary, one may proceed to partial or complete arthrectomy, or to excision or amputation. It is the only method of which this can be said. Langenbeck suggested an internal vertical incision, shorter and much more curved than Kocher's, some years ago, but it is impossible to gain access to the joint with sufficient ease through such a limited opening, it is not suitable for drainage, and it is said that it subsequently tends to the production of genu valgum. Stanley Boyd advocated (*British Medical Journal*, p. 656, vol. 1, 1897), longitudinal division of the patella and the patella ligament, he had performed this operation successfully in a man 50 years of age and saved a movable joint. Sèdillot and others advocated two limited, lateral, vertical incisions. None of these operations fulfil the requirements as does Kocher's method.

There are some other points in the details of Kocher's operation which deserve notice. When resection is performed, he advocates the sawing of the femur and the tibia so as to obtain a convex lower extremity of the femur and a concave upper surface of the tibia. This I find gives all the security which Kocher claims for it. The suggestion of this method was, I believe, first made by Professor Fenwick of Montreal, in 1871, and it is remarkable that it has not been more extensively employed. One distinct advantage of it in children is that the epiphyses are the more readily preserved from danger than if the usual method is employed. If we examine a section through the knee-joint and study the epiphyses in relation to the convex lower extremity of the femur and the irregular upper surface of the tibia, we can readily convince ourselves of this fact. The suggestion of Lockwood (*Brit. Med. Jour.*, p. 656, vol. 1, 1897), of shaping the upper end of the tibia into a wedge, the apical crest of which runs antero-posteriorly, and fitting this into a cavity prepared for it between the condyles of the femur, does not commend itself to us, because the epiphyses must necessarily be sacrificed by such a procedure. It is supposed to prevent lateral displacement, but as a fact this seldom occurs in complete excision.

Pegging the sawn bone together by ivory pegs or steel pins has had

its advocates, but it would seem unnecessary in complete excisions carried out in the manner advocated, as firm, bony anchylosis without deformity may thus readily be obtained.

Kocher advocates the subcortical method of König and Tilling in dealing with the ligaments and tendons. A chisel is used to separate a cortical portion of the bone, wherever possible, along with the attached ligament or tendon. This appears a good suggestion, and the procedure would be of more value than that adopted by Langenbeck and Ollier, the well known subperiosteal method of detaching the structures under consideration. Kocher chisels off an apophysis to which a tendon or ligament is attached. The final result of using this subcortical method is than firmer consolidation occurs in the wound and, more particularly in arthrectomy, a better functional result is obtained.

Lastly, let me state that excision of the knee is an operation which is attended with a great amount of shock, far more, for example, than would be the case in amputation at the knee or through the thigh. The operation is, therefore, not to be lightly undertaken. We should not hesitate to operate, however, where the disease is progressing after a fair trial of expectant treatment. Such cases usually have a prolonged and tedious illness if the operation is not undertaken, and even if they do recover, the result is a stiff joint, whilst a useful movable joint may, in many cases, be saved by operation. This remark of course applies mainly to children because in adults firm, bony anchylosis is always what we aim at, and for this reason early interference in adults is not as a rule good practice. One's best judgment must be exercised in each case individually, and things must never be allowed to go so far that the only choice finally lies between complete excision or amputation.

ON THE FORMS OF APHASIA MET WITH IN ABSCESS OF THE LEFT TEMPORAL LOBE.

BY

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An abscess in the left temporal lobe may give rise to a speech defect or it may not. Very considerable accumulations of pus may be situated in this region without any apparent speech disturbance, while, on the other hand, a small purulent focus may be enough to give rise to marked disturbance of speech. In speaking of defect of speech in this paper I intend to refer solely to aphasia, and not to either slowness of speech or to dysarthria.

Aphasia is probably present in nearly 50 per cent. of abscesses of the left temporal lobe. The exact form of aphasia met with is, however, rarely treated by writers on this subject with any degree of fulness or exactitude. The simple but vague statement that aphasia is present, being all that is found in the great majority of text-books, even in those dealing more especially with diseases of the nervous system. A few authors refer to *word-deafness* as being the only characteristic symptom of lesion in the temporal lobe. This form of aphasia is, however, comparatively rare. It would be a mistake to wait for its appearance in any case before concluding we had to do with an abscess in this situation. A pure and complete motor aphasia has been met with as also paraphasia, the presence of the former being explained by distant pressure, and that of the latter by the cutting off of the connections between the auditory and motor centres.

Within a few months I have had an opportunity of observing two cases of abscess consecutive to ear disease in the temporal lobe. In both a clinical type of aphasia was present which differs from the forms above referred to. The conditions were so similar that I believe they teach a useful lesson in helping to determine more easily what is often a difficult problem, *i. e.*, the differential diagnosis between temporal abscess and abscess elsewhere in the brain.

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* Read before the Canadian Medical Association, Ottawa, September, 1900.

CASE I.

Abscess of the Temporo-Sphenoidal Lobe Consequent on Purulent Otitis Media—Aphasia—Operation—Death Three Days after from Meningitis.

A delicate man, aged 22, was admitted into the Royal Victoria Hospital on August 5, 1900, under the care of Dr. Buller. In the early part of March of the present year he had an attack of influenza followed by acute purulent otitis media. After suffering severely for four days from pain in the left ear, a discharge occurred, this being followed by great relief. Under treatment, the discharge gradually ceased and he was apparently well on the first of May, although deaf and suffering from tinnitus aurium. The treatment of the ear continued,—Politzer inflation twice weekly and painting the throat with an iodine-glycerine solution. This treatment was continued daily till the first of July and afterwards three times a week.

On the 15th of July there was a sudden and violent recurrence of the pain in the ear lasting for about ten days. On the 26th of July he was seized with rigors and vomiting, the pain and tinnitus at the same time ceasing. At that time his temperature ranged between 100° and 101.5° F. The headache recurred on many occasions, however, and at the time of his entrance into the hospital he was suffering very severely. The vomiting occurred two or three times daily and was distinctly cerebral in type.

On admission, he was found to be suffering from more or less constant and severe headache with vomiting. He was slow in answering questions and from the history it would appear that since the onset of the sudden pain, etc., ten days previously, he has had great difficulty in naming objects. This difficulty still persists. It is found that he is unable to mention the name of any object whatever. He does not know his own or his mother's name. He, however, has a very extensive vocabulary of words and knows their proper use. Although he is unable to name an object he has no trouble in proving that he understands the use of objects he is totally unable to name. He understands perfectly what is said to him and he also correctly obeys commands given in writing. He is able to write from dictation and to copy correctly. He reads correctly and easily. The left ear is not discharging; the canal is narrow. The membrana tympani is congested but not perforated. There is no swelling or tenderness about the mastoid; a watch is heard at half an inch. *Eyes.*—The pupils are normal in size and reaction. There is distinctly a beginning double optic neuritis.

A diagnosis of abscess of the temporo-sphenoidal lobe was made and immediate operation determined on. Dr. Buller opened into the

mastoid cells. He found pus. Dr. Bell proceeded to expose the brain over the temporo-sphenoidal region and after opening the dura, he found the parts bulging, but not pulsating.

With a trocar he was able without any trouble to find a pus-containing cavity in the left temporal lobe. Nearly three ounces were evacuated. The night after the operation the patient slept better than he had done for many weeks, being free from pain and discomfort. Even within twelve hours after the operation it was noticed by several observers that there was a distinct improvement in his speech. In twenty-four hours the improvement was so marked that it could be said that he had completely recovered his lost power. All kinds of test objects were promptly and correctly named. Unfortunately about thirty hours after the operation, symptoms of meningitis developed, which proved fatal forty-eight hours after their onset.

A postmortem examination was not obtained. This does not, however, detract much from the clinical value of the case, as during life the presence of the abscess had been demonstrated.

CASE II.

Abscess of the Temporo-Sphenoidal Lobe Consequent on Purulent Otitis Media—Aphasia—Sudden Death from Respiratory Failure.

A girl, aged 18, who spoke both French and English, was admitted into the Royal Victoria Hospital on the 16th of February, 1900, complaining of headache and vomiting. The headache dates back to Christmas of 1899. It has been persistently present and generally severe, keeping her awake at nights. Pain has been generally referred to the left temporal region until a few days ago, since when its site has been continuously frontal. The vomiting set in about four weeks after the pain in the head was felt. It has been, with the exception of the last few days, more or less persistent since its onset.

A difficulty in speaking has been noticed since the headache has been first complained of. She seemed unable to utter the word at once which she wished to say. One of her friends expressed the difficulty in the words that "she seemed for a few moments to have forgotten what she wanted to say and only by an effort would she say what she wanted." The difficulty of speech rapidly increased in severity and in the course of a few days reached the intensity that it presented at the time of her entrance to hospital, six months after its onset. During the past month she has had several general convulsive movements, lasting about fifteen seconds and attended by loss of consciousness.

Past History.—When nine months old the patient had a purulent discharge from each ear lasting for three months. At three years of

age she had pneumonia followed at intervals by measles, chicken pox and whooping cough. At fourteen she had a discharge from behind the right ear (eczema), lasting three months. For a period of three days in the month of October last she suffered from frontal headache and vomiting. Both ceased and she has remained perfectly well up to the onset of her present symptoms on Christmas day, 1899.

The family history is of no importance.

On admission, she was found to be in a lethargic state, answering even simple questions with difficulty. She speaks very slowly and takes a considerable time before she attempts the answer to a question. She is unable to tell even approximately the time of onset of her trouble. She does not misplace words. Although well educated, she is not able to comprehend written language fully, being only able to pick out in a sentence here and there short simple words. She is able to write her own name, but otherwise her writing to both dictation and copy is imperfect, especially so to dictation. When asked to write "main" she writes "yen." In copying "donnez" she writes "danny." When asked to name simple objects shown her, she is unable to do so. When shown a pen, a key, a watch, etc., she is quite unable to recall their names either in French or English. All spoken commands appear to be clearly and perfectly understood although the response is slow. She has greater difficulty in recognizing individual letters than individual words.

Motor Power.—There is a slight paresis of the lower respiratory branches of the right facial nerve. Movement in all other parts is normal.

Sensation.—There is neither subjective or objective disturbance in the face or extremities.

Reflexes.—Superficial normal ; the knee jerks are much diminished and more so on the right than on the left side.

Dr. Buller reported on the conditions of the eyes and ears.

Eyes.—The right pupil is slightly larger than the left, but both react readily to light and accommodation. There is blurring of both optic discs and engorgement of the vessels, but it can hardly be said that there is a definitely established optic neuritis.

Ears.—She hears only on contact on both sides. There is a suppurative otitis media on the left side, with involvement of the bones of the roof of the tympanum. There is a profuse and fœtid discharge from the left ear.

The patient remained in the state described for several days, the only noticeable addition to the above symptoms being the development of the optic neuritis.

A diagnosis of abscess of the temporo-sphenoidal bone was made and an operation was determined on, but a few hours before it was to have taken place, the patient suddenly expired, the immediate cause being respiratory failure. I am indebted to Dr. Shirres for the following notes of the postmortem examination performed by him.

The membranes situated in the left middle fossa of the skull were markedly thickened, particularly over that part of the petrosal bone which forms the roof of the tympanum. The bone beneath was carious. The tympanum was also found diseased, but the mastoid cells were normal. The brain in the region of the temporal lobe on the left side was distinctly swollen and œdematous, being at least a third larger than the lobe on the right side. The convolutions were flattened and sulci shallow. On attempting to remove the brain, an abscess, coming to within about 3 mm. of the surface, burst about a quarter of an inch below the Sylvian fissure with the escape of about 40 c.c. of pus, having a foul odour, a greenish tint, and an acid reaction. About the middle of the under surface of the third temporo-sphenoidal convolution, on that part of the lobe that lies directly over the roof of the tympanum, an area of 3 cm. in breadth was discoloured and almost black and on the verge of rupturing. Nothing abnormal was to be seen in any of the other convolutions except in the hypocampal convolution of the left side, which was much swollen and displaced.

The brain having been hardened in 10 per cent. formalin solution, was then divided into five sections after Hamilton's method. The relations and extent of the abscess could now be accurately determined. There were found to be two distinct abscess cavities; one, the smaller, of very recent formation and higher placed, was situated mainly in the lower part of the first temporal convolution. It was from this abscess that the pus had escaped on removing the brain. The lower abscess, or the primary abscess, was confined chiefly to the middle and lower temporal convolutions, measured 50 mm. from before backwards, 40 mm. laterally, and 25 mm. from above downward and held over 40 cc. of fluid. This abscess had a firm and thick capsule with a smooth inner surface. There was no communication between the two abscesses, or between either of them and the ventricles. The walls of the upper abscess were irregular, the tissue being necrotic and discoloured. There was no trace of membrane. This abscess, as already mentioned, corresponded to the lower part of the first temporal convolution, extending internally from a depth of about 3 mm. from the cortex, reaching in front close to the external capsule near the base and anterior end of the lenticular nucleus, and behind to the level of the descending horn of the lateral ventricle.

From examination of the different sections of the brain an idea of the extent and relations of the abscess can be made out.

Section I.—Brain tissue normal. This section was composed of Broca's middle and superior frontal convolutions.

Section II.—Anterior surface: no disease can be seen. Posterior surface: superiorly a distinct necrotic area of the secondary or superior abscess is clearly seen lying in the substance of the superior temporo-sphenoidal convolution below the well marked fissure of Sylvius, extending from near the cortex inwards to the external and inferior angle of the lenticular nucleus. Below can be seen the capsular lining of the anterior end of the lower abscess cavity. The white fibres arising from this temporo-sphenoidal lobe and going to join the fibres of the internal capsule, are markedly destroyed. On handling this section we can make out that the disease is distinctly confined to the temporo-sphenoidal convolutions. The fissure of Sylvius intervenes between the diseased convolutions of the lobe and the præcentral and postcentral convolutions above, and Broca's convolution in front.

Section III.—Here again the disease is distinctly confined to the temporo-sphenoidal convolutions. Posteriorly we see two large abscess cavities bounded above by the fissure of Sylvius, internally by the descending horn of the lateral ventricle, and below by the swollen hypocampal convolution, the lingual and the fusiform. On the under surface of this section, near the external edge of the inferior temporo-sphenoidal convolution, is a necrotic area, the most dependent part of the large abscess cavity, and the wall here is very thin and on the verge of rupturing. On holding the section up to the light this is easily demonstrated.

Section IV.—Anterior surface: here again can be noticed the posterior extremities of the two abscess cavities bounded laterally and above by the hinder quarter of the Sylvian fissure, and internally by posterior and descending horns of the lateral ventricle; the posterior surface shows no trace of disease.

After the examination of the five sections one is persuaded that the disease was strictly confined to the temporo-sphenoidal convolutions, and that the angular gyrus, supramarginal and frontal convolutions were intact.

In both cases the type of aphasia was the same, a loss of the power of naming objects. In both cases there was not sufficient visual defect from the optic neuritis to interfere with fairly good vision, neither was there any cortical visual defect as far as could be ascertained. Both patients recognised fully the use of objects presented to them; they also understood without difficulty spoken language, showing that there was no word deafness.

The examination of the brain after death in the second case, showed that neither the posterior part of the first temporal, nor the third left frontal convolution was interfered with, the destruction of tissue being confined to the lower and more anterior parts of the second and third temporal convolutions. Although no examination of the brain in the first case was obtained, it is almost certain that the destruction of tissue occurred in the same area as the other case, that is, it was confined to the lower and anterior part of the temporal convolution. The rapid and almost complete recovery of the power of speech after the operation is strong evidence in support of the limitation of the destructive process to the temporal lobe.

How is an aphasia solely characterised by an inability to name things to be explained by a temporal lobe lesion ? Is it due to destruction of what has been called the *naming centre ?* There is considerable evidence in favour of setting aside a special part of the brain for such a centre. It was first suggested by Broadbent, and more recently ably supported from the results of clinical observations by Dr. C. K. Mills of Philadelphia. He looks upon the third temporal as the seat of the naming centre. The inability to name objects may, however, be due to the cutting off of the association tracts between the visual centre and the auditory centre, on the one side, and the latter and the motor centre for speech, on the other.

Whether these two cases were examples of direct injury to a "naming centre" or the cutting off of it from its connections, I am unable to say, but they are both of value, especially the second, as showing that a form of aphasia characterised by an inability to remember the name of objects or to recollect names, may arise from a destructive lesion confined to the temporo-sphenoidal lobe. This form of aphasia, present in a any suspected case of brain abscess, would, therefore, be of value in determining its localization.

To illustrate the conditions found in Case No. II.

FIG. I.

THIRD VERTICAL SECTION.—ANTERIOR SURFACE.

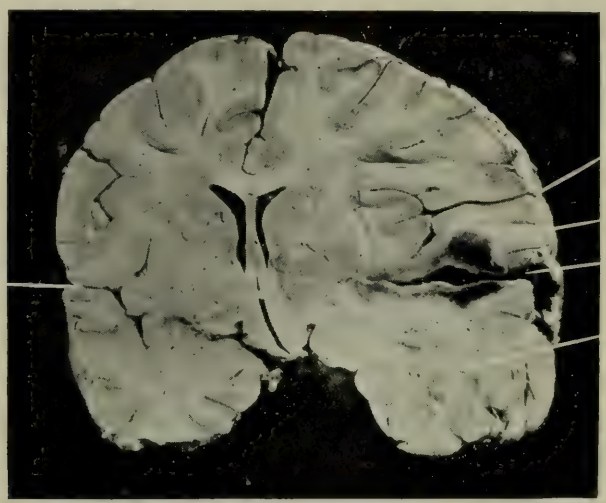


FIG II.

FOURTH VERTICAL SECTION.—POSTERIOR SURFACE.

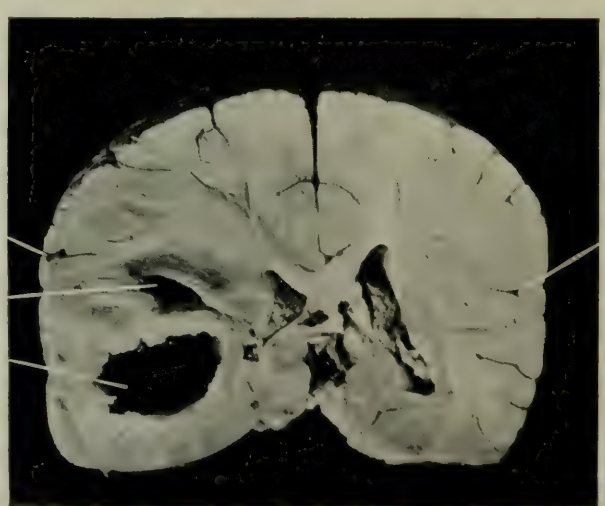
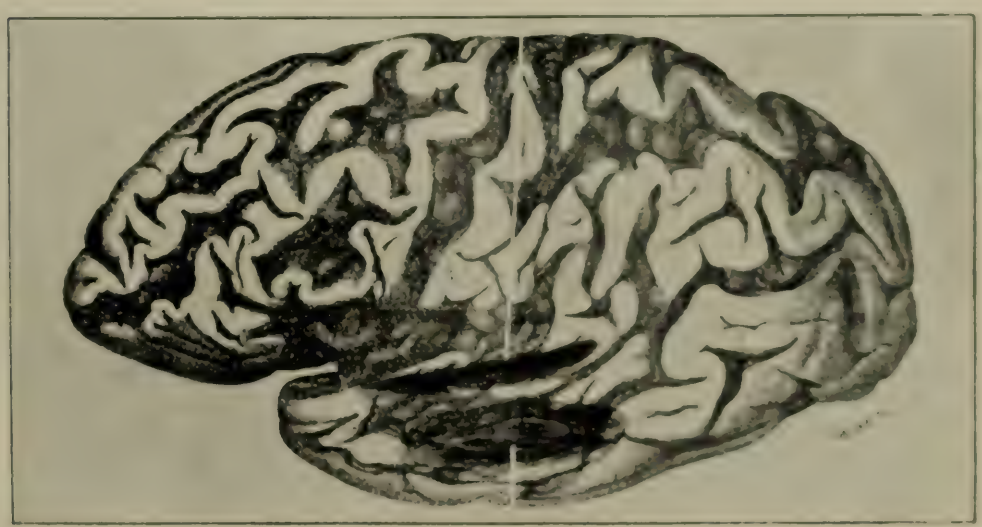


FIG. III.

Showing outline on the cortex corresponding to the abscess cavities.

Outline of Upper Abscess Cavity.



Outline of Lower Abscess Cavity.

VARIETIES OF COLON BACILLI ISOLATED FROM MAN.

BY

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The discovery of the colon bacillus by Emmerich in 1885 in the blood, organs, and alvine discharges of cholera patients in Naples, its later isolation from normal and abnormal fæces by Weisser and its further accurate differentiation from other intestinal bacteria coupled with a minute account of its biological characters by Escherich, were the three scientific achievements which laid the foundation of our modern knowledge of the flora of the alimentary canal.

In the decade and a half which have passed since the observations of these men, a more or less universal interest has been centred in the varied reactions of this organism under artificial laboratory conditions, while the elucidation of the problems connected with its widely spread habitat in nature and the growing belief in its power as a pathogenic agent to cause serious lesions in man and animals, have become more and more the excuse for a careful study of its life history.

Since the original description of the colon bacillus, many allied forms have been isolated in normal and pathological conditions, from sources both within and without the animal body, and bacteriologists have become convinced that this organism, instead of being the simple and possibly only constant inhabitant of the lower bowel in man, should in reality be looked upon as a group of bacilli, the many members of which differ considerably from each other in their cultural features and their pathogenic action.

Within a short time after Escherich's work Booker, in an exhaustive study of the bacteriology of summer diarrhœa, isolated seven different members of the colon group related to each other in their fundamental characters, but separated by important, although minor tests. In the then state of our knowledge of this organism Booker was unable to give a classification of these forms which he considered satisfactory and contented himself with naming the different varieties and calling attention to their principle reactions.

The experience of Booker in regard to the differentiation of these colon forms has been duplicated in many laboratories since the publication of his results and the confusion which necessarily arises from the

* Read before the 28th Annual Meeting of the American Public Health Association, held in Indianapolis, Oct. 22nd, 1900.

study of the same or allied micro-organisms by observers working in widely separated institutions in different countries, has been engendered by the universal employment of obscure and indefinite terms in bacteriological protocols.

The beginning of the present movement among scientific students to adopt definite known terms of positive or negative value in the description of intestinal bacteria was made in 1895 by Theobald Smith, who employed the fermentation tube in the separation of the different members of the colon group, estimating the quantity and composition of the gases formed from the different carbohydrates, as well as the rapidity of their evolution and the temperature best suited for their development. By this means Smith was able to give accurate data concerning the reactions of the typical B. Coli Communis as compared with B. Typhosus and B. Lactis Aerogenes, and to make out a number of intermediate forms related to these organisms.

Two years later, Gordon following the work of Smith in connection with the fermentation of the sugars and employing as well as a criterion of specificity, the number of flagella the different forms possess, was able to distinguish twenty-two distinct varieties of the colon species. Meanwhile Adelaide Ward Peckham had published the results of her work on the indol-producing powers of the typhoid and the colon. By cultivating an indol-producing colon on a variety of media she could deprive it of the capacity to generate indol. Again, she could impart this function to a bacillus not ordinarily producing this substance. Going still further she found that she could cause the Bacillus Typhosus itself to give definite reactions for indol. In fact, Peckham was able to cause every non-indol-forming colon and every typhoid culture to which she had access, to assume the property of producing indol.

In her work Peckham frequently met members of that group of micro-organisms which seemed to stand midway in their cultural features between the bacillus of Escherich and the bacillus of Eberth. Such forms as B. Choleræ Suis and B. Enteriditis of Gærtner, had long been considered to form the intermediate stages between these two species. It remained for Durham, however, to call special attention to these forms and to divide the whole series into three groups consisting of :

1. The Eberth Group—including B. Typhosus and its allies.
2. The Gærtner Group—including B. Enteriditis and its allies.
3. The Escherich Grop—including B. Coli Communis and its allies.

The Gærtner group includes besides B. Enteriditis of Gærtner, B. Choleræ suis, B. Morbificans bovis of Basenau, B. Breslaviensis of von Ermenghen, the Wurstvergiftung bacillus of Fischer, B. Friedeber-

gensis of Gaffky and Paak, the Cotta Fleischvergiftung bacillus and a number of similar organisms described by various observers in epidemics of meat poisoning.

Cushing has recently made this group the subject of elaborate study in connection with the problems of fermentation, reactions of acidity and alkalinity imparted to the media, and pathogenicity. He groups with these intermediate forms the bacillus isolated by Sanarelli from yellow fever patients, a bacillus isolated by Gwynn from a cervical abscess and a bacillus which he himself has isolated from an abscess over a rib, called by him Bacillus O. or, by other workers, Paracolon Cushing.

The agglutination test so valuable in the recognition of the bacillus typhosus has proved in Cushing's hands to have an equal significance in the study of these intermediate forms. Cushing's work in this particular has recently been confirmed by McCrae working under Adami.

The term *Paracolon*, introduced originally by Gilbert to indicate the members of the colon group which differed in a few reactions from the typical colon, has found a ready acceptance among bacteriologists. Under the nomenclature of paracolibacillary organisms, Gilbert has described five different types. The first type has two members, the *opaque* variety of B. lactis aërogenes of Escherich, identified by its opaque yellow colonies on gelatine, and the *transparent* variety of the same, identical with the bacillus of endocarditis of Gilbert and Lion.

"The paricolibacillus of the second type is distinguished from the B. Coli by its inability to generate indol; that of the third type by its failure to act on lactose; that of the fourth type, by the absence of motility and of the power of generating indol; the fifth type by lack of motility, incapacity of producing indol and inactivity in respect to lactose, three of the cardinal properties of the colon."

The chief objection to such a classification is the unreliability of the reaction for indol, which as stated above has been shown to be an inconstant character of any organism.

The recent work of Fuller and Johnston, in which they classified the water bacteria found in the Ohio River, according to a large number of constant characters—using those reactions which were recommended by the Bacteriological Section of the American Public Health Association, and eliminating any tests which failed to give 100% of constancy, has suggested to the writer the advisability of adopting a somewhat similar classification in the descriptions of members of the Colon-Typhoid series. Therefore, all of the organisms which were in the laboratory were subjected to the treatment recommended by Fuller and Johnston, namely, they were grown in broth three days, in gelatine plates three days and on slant agar three days after which time the various culture media were seeded.

By such a means an organism is forced to assume a constant laboratory character, parallel in a way with the constant character it may have in its normal habitat. We thus avoid in our description of its biology that period in the life history of any bacterium when it possesses inconstant features, as is the case for instance, immediately after isolation from the intestines. The various members of this series have been classified as far as possible in accordance with these constant characters and the result of this classification is the chart which is appended to this paper. While the different types described seem to be separated from each other by only a few characters, yet each type is represented by a number of corresponding cultures and the organisms of one type never assume the properties of other types. In order to assure completeness in this table of bacteria the reactions of B. Typhosus were estimated at the same time and the reactions of B. Lactis Aerogenes and B. Cloacæ are taken directly from the tables of Fuller and Johnston. The fermenting properties of certain members of the intermediate group as well have been adopted from Cushing's paper, as some of the cultures used in Montreal died out.

The typical Bacillus Coli Communis originally described by Escherich is a motile bacillus without the property of forming spores, whose diameter is less than 1 micromillimeter. It forms a scum on broth, with production of a turbidity, is not dull or wrinkled on agar, fails to show a characteristic appearance on gelatine plates. It causes an abundant growth of potato, grows in the closed arm of the fermentation tube, grows as an anaërobe, grows at body temperature, and is affected by the range of the reaction of the media. It does not liquify gelatin casein or blood serum; it produces gas with dextrose, saccharose and lactose; it produces nitrites, indol and a fæcal odor, produces acid and coagulates milk. On agar it is not chromogenic or fluorescent, but usually prefers an agar which is slightly acid in reaction. It is pathogenic for mice in intraperitoneal inoculation of 1 cc.m. doses of a 24-hour fluid culture.

The estimation of these reactions while apparently simple may at times be very difficult of attainment, as the colon when first isolated from the body does not show a characteristic biology. Its morphology is subject to the greatest variation. It may appear either as simple rod-shaped bacilli, as straight bacilli many times the length of the typical form, maintaining the same diameter throughout, or as a diplococcoid body, as has been pointed out by Adami. The latter form, according to Adami, is more or less an attempt on the part of the organism to form resistant bodies, and is the condition in which the organism appears in the tissues. Cultures from internal organs which on section

show no bacilli but only a profusion of coccoid and diplococcoid bodies, from secretions like ascitic fluid which show the same bodies, will invariably grow out after a lapse of 24 hours into a typical colon bacillus. The same may be said of the long straight forms which are often encountered in the fluid from the gall bladder. These, like the diplococcoid bodies, invariably produce bacilli differing in no particular from the typical colon in morphology and belonging to some pure type of this species.

The question of motility has been disputed by different observers and the colon has been said at times to possess and at other times not to possess this character. Examined in a 24-hour fluid culture, the organisms classed as colon or allied forms, have never failed to show active motility. The velocity of the colon is not as great as that of many motile bacilli but its appearance is unquestionable. Despite the fact that Theobald Smith, in determining the position of an organism which in its cultural features corresponded to the hog cholera bacillus but which lacked motility, unhesitatingly placed it with the hog cholera group, according to Fuller and Johnston permanent absence of motility must be considered as a radical departure from the pure colon type.

The production of gas in carbohydrates must be studied only with sugars which have been sterilised in the steam steriliser—for the pressure and temperature of the autoclave are sufficient to break down saccharose and lactose into the simpler dextrose and by-products. It is essential in studying the colon that these three sugars be used, as certain varieties ferment one and not the others ; only the typical colon and its near allies fermenting all three carbohydrates.

The test for indol has never yielded a satisfactory result. Only broth which has been rendered free from sugar by the previous growth in it of a fermenting bacillus can be utilized for this purpose, for it has been shown by Theobald Smith that a small amount of carbohydrate will inhibit the formation of indol. Even with this precaution the different varieties of colon seem to produce this substance in a most unreliable fashion, some forms only producing it when fresh from the intestine. Probably the only possible way of estimating this character with accuracy will be to utilize large quantities of sugar-free broth which after an incubation of 15 to 20 days may be distilled and the distillate tested for indol and by-products. In this way Dr. Bruere of the Royal Victoria Hospital is at present endeavoring to ascertain the differences between the various paracolibacillary forms.

The perception of a faecal odor, similar to the test for indol, does not give always that reliability which is desirable in the estimation of a constant character. Like all tests which depend on the sense percep-

tion, of smell, which differs so largely in different individuals, the fæcal odor can only be considered as a doubtful reaction.

The production of nitrites may be estimated in connection with the routine tests for indol by sulphuric acid, when one uses a broth which does not itself contain traces of nitrites. A more reliable method, however, since ordinary broth or sugar-free broth contains this substance, is to utilize a Dunham's solution made from a peptone free from nitrites, or the so-called nitrate broth containing a small percentage of potassium nitrate and a little peptone. In either case the organism by its growth may directly reduce the nitrates to the nitrite condition, or, breaking up the peptone, oxidise the nascent nitrogen to a nitrate. The test may preferably be made with nitrate broth, using Dunham's solution as a control.

The inoculation of the colon bacillus and its allies on agar tubes, the reaction of which varied between an acidity of 1.5° and an alkalinity of 6.0, revealed a fairly constant law in regard to the profusion of growth. The colon grows most abundantly on agar which is slightly acid or of an acidity of 1.5°, the growth on neutral agar being as a rule slightly less. As one passes from the neutral to the alkaline agars the abundance of growth rapidly diminishes—an agar of an alkalinity of 1.5 giving a less visible growth than the neutral, 3.0 agar only a faint growth, 4.5 agar only traces, while an agar of an alkalinity of 6.0 inhibits the growth entirely.

All of the organisms belonging to the colon, typhoid or intermediate groups which we have worked with may be divided into a certain number of types which are represented on the chart. For convenience of description only, they have been arranged in certain orders, not that they necessarily have this place in nature. The different varieties of pure colon, if we may use the phrase, have been divided into, Colon A., B. ,C., D. and E.

Under Colon A., have been included all those forms which correspond to Fuller and Johnston's table of characters. These colons ferment all the sugars, produce indol, nitrites and a fæcal odor ; grow luxuriantly on potato and produce a scum on broth. They are pathogenic in all cases to mice by intraperitoneal inoculation. As a rule they grow most luxuriantly on neutral agar.

The second type, named Colon B., differs from the first in never producing a pellicle on broth. It produces indol and a fæcal odor, grows most luxuriantly on agar of an acidity of 1.5° and is pathogenic. While the characters separating this type from the previous one seem so slight as not worthy of making a separate class, yet the confusion of statements in the literature about the colon at times produc-

ing a definite scum on broth, and at other times not, and the experience in the Molson laboratory that the form of organism which produced a scum always did so, and the form not producing such a scum invariably failed to do so—has led us to formulate these two types. In fact, the majority of bacilli which were encountered in Montreal correspond to type B. rather than type A., but for uniformity of description Fuller and Johnston's colon has been considered the model form.

Between Colon B. and the next type C. may be most conveniently placed those forms which have lost their pathogenicity. This doubtless may occur with any variety of colon under unfavourable conditions of growth and cannot be said to constitute a different variety. This loss in pathogenicity was encountered in only one form, a variety obtained from Dr. Harris in Baltimore. All other varieties of colon, with one exception to be mentioned later on, were pathogenic in intraperitoneal inoculations.

If we combine loss of pathogenicity with loss of motility we have a form which is identical with B. Lactis aërogenes of Escherich, not producing indol or a fæcal odor, but agreeing in its other reactions with B. Coli Communis. As has been indicated above, these differences should suffice to make this form a distinct variety, separated as it is by constant unvarying characters.

Under Colon C., have been included those forms which agree with the typical colon in most of its reactions, but differ in the fermentation of the sugars. Dextrose and lactose are fermented, saccharose never. A scum is produced on broth, indol is formed and a fæcal odor exudes from the cultures. This variety also has been encountered a number of times.

Colon D. includes bacilli similar in all respects to the preceding, in respect of the fermentation of lactose and dextrose, but like Colon B., the corresponding first derivative from Colon A., it fails to produce a definite pellicle on broth.

A further derivative of the pure colon is that form which produces fermentation with dextrose and saccharose but not with lactose. It has been described frequently by earlier writers and is a well recognized variety of B. Coli Comm. In our case it was not pathogenic, did not produce indol, nitrites, or a fæcal odor, but otherwise was identical with the prototype Colon A.

As we pass from these varieties of paracolibacillary organisms which ferment two of the three sugars, to those which ferment but one, namely dextrose, we enter upon the intermediate group of Gærtner, or the Hog Cholera group. The first form which is encountered here, which goes by the name of paracolon, is the organism of Cushing called by

him Bacillus O. or by other authorities, Paracolon Cushing. It may well be called Paracolon A., and may serve as the introduction to the intermediate group. Isolated by Cushing from an abscess over a rib, this form possesses characters intermediate between typhoid and colon. It grows very slowly on potato, giving a visible growth only after several days incubation ; it ferments dextrose, not lactose and saccharose ; it does not coagulate milk or produce acidity ; it produces indol after the lapse of a number of days, has a fæcal odor and is pathogenic to mice.

With the paracolon of Cushing may be grouped B., variety Hatton, of Durham and B. Morbificans Bovis of Basenau, which isolated from far different sources by different observers agree in so many details as to be placed by Durham in this intermediate group, all the members of which are pathogenic. Included in the same group are the so-called "icteroides" isolated by Sanarelli and Reed from yellow fever patients. These bacteria differ from the preceding only in the formation of a moist luxuriant growth on potato, fermenting only one sugar—dextrose—as the other forms do. Associated with these icteroides we have placed a further variety which has been called Paracolon B. It was obtained from the liver of a healthy rabbit and was originally considered to be a simple colon derivative. It agrees in all cultural features with the organisms of Reed and Sanarelli, and without doubt belongs to this group—failing to ferment lactose and saccharose and failing to produce acidity in, or to coagulate milk.

Among the intermediate members of this group should doubtless be included paracolons isolated by Widal and Gwynn. The description given by Widal is too meagre to furnish a means of classification but the work of Gwynn and of Cushing on the paracolon isolated by the former shows clearly the place this bacillus should occupy. From Gwynn's description has been compiled the life history of this bacillus and it has in this way been included in the chart. It is actively motile, grows on bouillon as a distinct cloud, not forming a pellicle, acidifies milk faintly, without coagulating, gives a luxuriant growth on potato and does not liquify gelatine. It ferments dextrose, not lactose or saccharose and it does not produce indol.

The next member of this group is the B. Choleræ Suis, which is identical with the others in the main characters, yet liquifies gelatine and blood serum. Because of these characters it has been placed last in this group and has been associated with the B. Cloacæ which is yet more positive in liquifying gelatine, casein and blood serum. The latter produces indol, nitrites and fæcal odor, has a luxuriant growth on potato and produces a scum on broth. Naturally it does not belong

to this intermediate group and has only been mentioned here for purposes of comparison with B. Choleræ Suis.

Intermediate between colon and typhoid but approaching more to the type of the Eberth's bacillus, are a number of little known and little studied forms of paratyphoid. The only organism which we have encountered which seems to belong to this group is one we have provisionally named Paracolon C. It was obtained from the liver of a healthy rabbit and is evidently allied more to typhoid than to colon, forming a faint growth on potato but not producing indol or a fæcal odor, not coagulating or acidifying milk, nor fermenting the carbohydrates. It seems to be closely related to the form isolated by Flexner from cases of dysentery, in association with the amœba coli, agreeing with it in its fundamental characteristics. It, like Flexner's organism, should doubtless be classified as a para-typhoid. It corresponds, as far as can be told, with other varieties of intestinal bacteria described heretofore, especially the non-fermenting varieties of Widal and Gilbert.

The B. Typhosus stands next for purposes of comparison. This organism is too well known to need any further words, but its place in this chart is justified by reference to its invisible growth on potato, its failure to produce gas or to coagulate milk and its being non-pathogenic for mice under ordinary laboratory conditions.

The next organism in our series of paracolibacillary forms, which is named Paracolon D., provisionally, has been isolated in two instances, from the stomach of a healthy man in one case and, again, from a typhoid spleen. It is the furthest removed from both the colon and typhoid type and represents a variation from the colon in not fermenting any sugar, not producing nitrites, indol, or a fæcal odor, in not growing on potato, not being pathogenic, and in liquifying gelatine. In morphology it is a fine short bacillus, barely distinguishable from a micrococcus and its especial characteristic is the growth on slightly alkaline agar as a faint film which after a lapse of 48 hours seems indistinguishable from the substratum of medium. While it may be identical with other intestinal bacteria described before, yet we have not come upon any similar organisms recorded in the literature and we are therefore inclined to look upon it as a new species. It has been named provisionally Paracolon D.

From the study of the organisms given in the chart, one is convinced that while a proper biological classification of bacteria is still as far as ever from attainment, yet much may be done by this graphic method in illustrating the relations which the different intestinal bacteria bear to each other. With one or two exceptions the bacteria described here are well known forms which have already been reported. By means of

such a table of constant characters it becomes possible however, to fill in the gaps of our knowledge concerning intestinal bacteria, and adopting standard reactions in our descriptions, by means of a comparison of results in different laboratories, to arrive at a more and more complete knowledge of the colon and its allies the paracolibacillary organisms.

I wish to express my thanks to Dr. Adami, under whose supervision the work reported in this paper has been carried out, and to Dr. Harris of Baltimore, who has furnished me with a number of cultures from the Johns Hopkins Pathological Laboratory.

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Type	Name.	Investigators.	Source.	Morphology.				Biology.																										Pathogenicity.
								Cultutral Features.									Biochemical Features.																			Mice
								Broth.		Agar.		Gelatine Plate.	Potato.		Fermentation Tube.					Liquifaction.			Gas Production.					Milk.			Agar.				
				Bacillus.	Diameter greater than 1 micromillimeter.	Motile.	Spores.	Scum.	Turbidity.	Dull.	Wrinkled.	Characteristic appearance.	Visible.	Luxuriant.	Growth in closed arm.	Grows at body temperature.	Facultative anarobe.	Affected by range of reaction.	Gelatine.	Casein.	Blood Serum.	Dextrose.	Saccharose.	Lactose.	Nitrite.	Indol	Acidity.	Coagulation.	Fecal Odor	Chromogenesis.	Fluorescence	Most favorable reaction.	Intraperitoneal Inoculation.
Colon A	B. Coli Com	Escherich	Normal Intestine	+	—	+	—	+	+	—	—	—	+	+	+	+	+	+	—	—	—	+	+	+	+	+	+	+	+	—	—	0	+
Colon B	B. Coli Com	Ford	Stomach Pernicious Anaemia	+	—	+	—	—	+	—	—	—	+	+	+	+	+	+	—	—	—	+	+	+	—	+	+	+	+	—	-	+ 1.5	+
	B. Coli Com	Harris	?	+	—	+	—	—	+	—	—	—	+	+	+	+	+	+	—	—	—	+	+	+	—	+	+	+	+	—	—	+ 1.5	—
	Lactis Aerogens	Escherich	Normal Duodenum	+	—	—	—	+	+	—	—	—	+	+	+	+	+	+	—	—	—	+	+	+	+	—	+	+	+	—	—	?	—
Colon C	B. Coli Com	McCrae	Feces	+	—	+	—	+	+	—	—	—	+	+	+	+	+	+	—	—	—	+	—	+	—	+	+	+	+	—		+ 1.5	+
Colon D	B. Coli Com	Ford	Typhoid Spleen	+	—	+	—	—	+	—	—	—	+	+	+	+	+	+	—	—	—	+	—	+	—	+	+	+	+	—	—	+	—
Colon E	B. Coli Com	Ford	Kidney, Rabbit	+	—	+	—	—	+	—	—	—	+	+	+	+	+	+	—	—	—	+	+	—	—	—	+	+	—	—	—	+ 1.5	+
Paracolon A	Paracolon Cushing	Cushing	Abcess Rib	+	—	+	—	—	+	—	—	—	+	—	+	+	+	+	—	—	—	+	—	—	—	+	—	—	+	—	—	+	+
	Paracolon Gwynn	Gwynn	Abscess of Neck	+	—	+	—	—	+	—	—	—	+	+	+	+	+	+	—	?	?	+	—	—	?	+	—	—	?	—	—	?	?
	B. Hatton	Durham	?	+	—	+	—	—	+	—	—	—	+	—	+	+	+	+	—	—	—	+	—	—	—	+	—	+	—	—	—	+	+
	B. Morb. Bovis	Basenau	?	+	—	+	—	—	+	—	—	—	—	—	+	+	+	+	—	—	—	+	—	—	—	+	—	+	—	—	—	0	+
	Icteroides	Sanarelli	Yellow Fever Patients	+	—	+	—	—	+	—	—	—	+	+	+	+	+	+	—	—	—	+	—	—	—	—	—	—	+	—	—	0	+
	Icteroides	Reed	Yellow Fever Patients	+	—	+	—	—	+	—	—	—	+	+	+	+	+	+	—	—	—	+	—	—	—	—	—	+	—	—	—	0	+
Paracolon B	Paracolon B	Ford	Liver, Rabbit	+	—	+	—	—	+	—	—	—	+	+	+	+	+	+	—	—	—	+	—	—	—	—	—	—	—	—	—	+ 1.5	+
	B. Cholera Suis			+	—	+	—	—	+	—	—	+	—	—	+	+	+	+	+	—	+	+	—	—	—	—	—	+	+	—	—	0	+
Cloacae	B. Cloacae	Jordon	Sewage	+	—	+	—	+	+	—	—	—	+	—	+	+	+	+	+	+	+	+	+	+	+	+	?	+	+	—	—	?	+
Paracolon C	Paracolon C	Ford	Liver, Rabbit	+	—	+	—	—	+	—	—	—	+	—	—	+	+	+	—	—	—	—	— (?)	— (?)	~	—	-	—	—	—	—	?	?
Typhosus	B. Typhosus	Eberth	Typhoid Lesions	÷	—	+	—	—	+	—	—	—	—	—	+	+	+	+	—	—	—	—	—	—	—	—	—	—	—	—	—	+	—
Paracolon D	Paracolon D	Ford	Stomach and Typhoid Spleen	+	—	+	—	—	+	—	—	—	—	—	—	+	+	+	+	—	—	—	—	—	—	—	—	+	+	—	—	—	—

Note. In preparing the chart which is appended to this paper the special varieties have been ascribed to the investigator who first described them. In separating the different varieties of colon, however, this has been found impossible, hence under the division of "Investigator" has been placed simply the name of the individual from whom the culture used was obtained. The reactions of all the media employed are estimated according to the neutrality to Phenol Pthalein.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

The Nervous Symptoms and Sequelæ of Influenza.

At the recent meeting of the British Medical Association, held at Ipswich, a very important discussion took place in the Section of Medicine on Influenza as it affects the Nervous System.

Dr. Judson S. Bury, of Manchester, opened the discussion. He considers that the nervous disturbances produced by the influenza bacillus and its poisonous products may be broadly separated into two groups. In the first group he places nervous diseases which develop during or shortly after the febrile stage, instancing meningitis and hæmorrhagic encephalitis as the most marked examples of this group. In the second group are included the nervous troubles which are usually met with after the attack has subsided, neurasthenia and multiple neuritis being mentioned as good examples.

It is assumed that the toxins produced by the bacilli are more dilute and less virulent in the second than in the first group, being sometimes sufficiently powerful to initiate degenerative changes in the nerve tissue, whereas in other cases they appear to simply bring about functional disturbances without giving rise to any recognisable anatomical changes.

As a good example of the first group he narrates the particulars of a case of meningo-encephalitis, characterized by headache, pyrexia, and a rapidly developing coma, death occurring a week after the onset of the symptoms. The postmortem showed a hæmorrhagic meningo-encephalitis chiefly affecting the frontal lobes of the brain. Although the presence of the influenza bacillus was not demonstrated in the brain, still Dr. Bury considers that there was strong presumptive evidence, in the absence of disease elsewhere, that the meningitis was influenzal in its origin.

Meningitis may exist alone, but is probably more frequently attended by inflammatory disease in the brain itself. Mention is made of the not

infrequent condition of a meningitis being set up by streptococci or staphylococci in the course of an influenza, sometimes the bacillus of the latter disease being present and sometimes absent. The meningitis may be secondary to a purulent otitis set up by influenza, or to a suppurative condition of the nasal cavities. There would appear to be little doubt that influenza is not an infrequent cause of meningitis and of meningo-encephalitis.

Another cerebral complication of a grave character occurring after influenza is cerebral abscess. Dr. Bury refers to a case occurring in the practice of one of his colleagues, where it was secondary to a collection of pus in the ethmoidal cells consequent on an influenza. An abscess was found in the right frontal lobe and a small collection of pus in the upper ethmoidal sinuses on the right side. The great frequency of suppurative middle-ear disease during either the course or after the subsidence of an influenza is an every day experience of the practitioner during an influenza epidemic. It is, therefore, not surprising that cerebral abscess now and then follows. The writer, at the late meeting of the Canadian Medical Association, described a case of abscess of the temporo-sphenoidal lobe consequent on a suppurative otitis media coming on during the course of an attack of an influenza. The first definite cerebral symptoms were observed some three months after the influenzal attack. Reference was made by Dr. Bury to cerebral abscess following influenza when no definite suppurative focus of origin was to be met with at the autopsy.

The post-influenzal nervous disorders are very numerous, nearly all forms of inflammatory and degenerative lesions being met with. Not only do we find lesions in the brain and cord, but also in the cerebral and spinal peripheral nerves.

As regards the cord, almost every variety of myelitis or of degeneration of its various tracts may occur. Among the cerebral sequelæ, we meet with the various functional disturbances, as neurasthenia, hysteria, epilepsy, various forms of pyschosis, etc. Among the inflammatory diseases of the cerebrum, we have the various types of encephalitis as well as general and local meningitis. The peripheral lesions include almost every known form of neuralgia and multiple as well as local neuritis.

Particular attention is called by Dr. Bury to the striking peculiarities of the action of the influenzal poison on the bulbar nuclei. Thus, "while, as in diphtheria, there may be paralysis of accommodation associated with paralysis of the palate, there is a greater variety in influenza than in diphtheria as regards the grouping of muscles affected with paralysis. Thus we meet with isolated paralysis of the superior rectus,

or of the internal or external recti, with transitory dilatation of one pupil, with intermittent paralysis of accommodation, with paralysis of both thirds, or both fourths, or of both sixths, or of both sevenths, or with paralysis of one side of the tongue." Recovery is looked upon as almost invariable in these, hence the conclusion that the disturbance is of a functional character, or, at least, due to slight changes.

Dr. Bury concluded his careful paper by narrating a number of interesting cases of nervous sequels of influenza. One case in particular is worthy of mention. It was a form of wide spread atrophic motor paralysis without any sensory involvement.

The patient, a girl aged fifteen years, presented all the symptoms of an influenza at the onset of her illness, the paralysis soon developing, and in a short time after the most profoundly affected muscles presented the reaction of degeneration. The knee jerks were absent and although a year after there was a complete recovery as far as the loss of motion was concerned, the knee jerks did not return.

Such cases are not uncommon. They may be due either to a poliomyelitis or a peripheral neuritis, or both these conditions may be present. It is likely that in the great majority of cases the paralysis is peripheral and not central in origin. Otherwise recoveries would neither be so frequent nor so complete as they usually are.

Dr. Bury and the speakers who followed him pointed to the difficulties in recognising an influenza, and consequently the probability of numerous errors. The diagnosis of influenza is based more on negative than positive facts. The sudden advent of a febrile illness during an influenzal wave is about all the positive evidence usually considered necessary to establish a diagnosis. While our knowledge is so limited we must of necessity be prepared for numerous errors in diagnosis, and consequently in judging of the nature and cause of the complications and sequelæ of febrile diseases. *James Stewart.*

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

The Treatment of Simple Fractures.

WILLIAM H. BENNETT. "A Discussion on the Methods at Present Available for the Treatment of Simple (Subcutaneous) Fractures." *British Medical Journal, Oct. 6, 1900.*

Bennett makes a general statement of the present position of the treatment of simple fractures, he having made a collective investigation of the views of about three hundred surgeons in London, the Provinces, Ireland and Scotland.

1. The treatment of simple fractures at present, although less stereotyped than hitherto, is still conducted generally too much upon lines that are traditional rather than rational.

2. The use of splints for long periods is disadvantageous, especially in the form of irremovable appliances such as plaster of Paris and the like.

3. Speaking generally, the earlier movements of the joints above and below the fracture in a long bone are used, the shorter is the time occupied in recovery.

4. The legitimate scope of the operative treatment of simple fractures is limited, and should be confined to cases which are otherwise unmanageable, special cases such as certain spiral and oblique fractures, and certain fractures near joints in adults, notably of the humerus at the elbow.

5. The operative treatment of recent fractures of the patella is by no means so generally satisfactory or so free from risk as published cases would tend to show; and further, in cases in which the separation of the fragments does not exceed one-half or even three-quarters of an inch, as good results for practical purposes are usually obtainable without operation, although less rapid.

6. The use of massage and passive movements immediately in simple fracture, when the circumstances of the patient and of the practitioner admit of it, either in its entirety or with modifications is, in the majority of cases, the best means of effecting a rapid and useful recovery.

7. The tendency of late has been to exaggerate the degree of disability and diminution in wage-earning capacity following upon simple fractures.

8. Although no pains should be spared in obtaining perfect position of the fracture ends, moderate displacement, provided that it is not rotatory, is not necessarily followed by any disability if care be taken by the use of early movements to prevent any matting of the parts around the fracture; in other words, the disability which follows in certain cases in which the position of the united fragments is not ideal is due, not to the bony deformity, but to the adhesion of the soft parts around, which is easily preventable.

9. Having regard to the unavoidable modifications which must be dictated by circumstances, social and otherwise, of the patient, and by the facilities possessed by the practitioner, no one method of treatment for simple fractures can be insisted upon for routine use even in cases in which the local conditions are precisely alike.

Cubitus Varus.

Lewis A. Stimson. "Cubitus Varus or 'Gun-stock' Deformity following Fracture of the Lower End of the Humerus." *Annals of Surgery, Sept., 1900.*

Stimson points out that fracture of the lower end of the humerus in some of its forms is not infrequently followed, especially in the young, by a conspicuous deformity of the limb known as "gun-stock" deformity, which consists in marked permanent adduction of the forearm, and is most apparent when the elbow is in full extension. The most marked clinical feature is the apparently abrupt movement made by the forearm towards the ulnar side as the limb approaches full extension, and the peculiarly ungraceful appearance of the limb in this position. Flexion, extension, and rotation are usually normal. The elbow viewed from behind shows the olecranon prominent and slightly displaced towards the inner side, flattening of the inner side of the elbow, and fulness of the outer side on flexion at a right angle with apparent enlargement of the external condyle below and behind. The author arrives at the conclusion that the close resemblance in a chance collection of six cases, their easy experimental production, and the almost total absence of specimens showing lesions of another kind, justify the belief that the common anatomical cause of cubitus varus is not ascent of the internal or descent of the external condyle after fracture extending into the joint, but that, on the contrary, it is an angular displacement of the entire lower end of the bone after a supracondyloid fracture, or of its lower portion after a fracture which is practically a partial separation of the cartilaginous epiphysis, especially at its outer side. The latter form of fracture seems to be possible only at an early age, not over ten or twelve years, because of the marked relative diminution in the size of the epiphysis as age increases.

Recognition of the displacement ought to be easy by attention to the level of the external epicondyle and head of the radius as compared with that of the internal condyle. Error might arise through mistaking the lower end of the supinator ridge for the external epicondyle, but it could be avoided by seeking the head of the radius and the adjoining edge of the capitellum.

Correction of the displacement could probably be easily made by pressure upwards and outwards against the olecranon in rectangular flexion of the joint, or abduction of the fully extended forearm, and maintenance of the latter position for a week or two would probably be the surest means of preventing recurrence, but it should be combined with confinement to the bed. Full flexion of the joint, which has been recommended of late for the treatment of all forms of fractures in this region, could not be trusted to correct displacement or prevent recurrence, because, in all patients whom he had seen with the deformity, free flexion at the joint was possible. As the deformity does not prevent the attitude, the attitude cannot prevent the deformity. If the convenient attitude of flexion at a right angle is chosen, and especially if the fracture is supracondyloid, pressure upward against the olecranon by a supporting sling must be carefully avoided, because such pressure would be transmitted to the inner half of the fragment, and would tend to produce the deviation which we seek to avoid. The sling should take the weight of the limb at the wrist. In the other, the lower and common form of fracture, the rectangular position might be safely taken if incasement in plaster of Paris was used, and the upper portion of the dressing carried over the top of the shoulder so as to prevent its descent, which would permit, or perhaps even produce, recurrence of the displacement.

Pedicled Flaps in Injuries of the Hand.

W. E. Shroeder. "The Value of Pedicled Flaps in Injuries of the Hand." *The American Journal of the Medical Sciences, Oct., 1900.*

The injuries met with in the hand which result in the destruction of the skin and subcutaneous tissues, leaving the tendons and all or some of the bones and joints intact, may in many instances be repaired by judicious treatment. Shroeder points out that the elasticity and resistance required of the skin in the palm of the hand is not furnished by the Thiersch or free-flap method, although both of these methods may be used successfully on the dorsal surface of the hand. Dr. Fenger is credited with having first applied the method described.

The operation consists of several steps. First, after the hand and the hip have been rendered thoroughly aseptic, the hand is placed upon the hip and incisions made in the skin as guides. The anterior and

posterior flap is formed having an anterior and posterior pedicle. The anterior flap passes over the crest of the ilium. The denuded hand is placed in position in the pocket and the upper and lower flaps united, as well as the lower border of the lower flap, to the fingers and the upper border of the upper flap to the edge of the skin of the wrist. It is important not to take too much subcutaneous tissue in the flap and to avoid all tension on the pedicles. The edges of the skin of the hand must be undermined for at least one-quarter of an inch so as to allow of easy approximations. Large quantities of gauze dressings are placed over the hand, and a plaster cast is applied, extending from the shoulder to the gluteo-femoral fold. At the end of three days a trap-door is cut in the cast and the dressings changed. The remaining steps are to separate the inner pedicle on the eighth day, and the outer pedicle on the sixteenth day, and if necessary later to unite the bridges of flap between the fingers. The wound on the hip is scraped and covered with Thiersch's grafts. The advantages claimed for the method are :—mobility, elasticity, and certainty of taking.

Ophthalmology.

UNDER THE CHARGE OF FRANK BULLER,

Lesions of the Visual Tract in Diseases of the Nervous System.

C. O. Hawthorne. "Eye Symptoms of Locomotor Ataxia and Clinical Record of Thirty Cases." *British Med. Jour., Mar. 3, 1900.*

Carl Kunn. "Disassociated Paralysis of the Eye Muscles in a Case of Tabes." *Wein. Klin. Wochen., April 12, 1900.*

C. A. Oliver. "Clinical Study of the Ocular Symptoms found in so-called Posterior Spinal Sclerosis." *Amer. Jour. Med. Sciences, July, 1900.*

Ward A. Holden. "Sequences of changes in the Optic Chiasm produced by Acromegaly in Three Cases." *Archives of Neurology and Pyscopathology, Vol. II., 1899.*

Hawthorne's deductions are :—

(1) Optic nerve atrophy, an ocular paralysis, or an Argyll-Robertson pupil, may exist as an isolated symptom presumably for years.

(2) Any two of these symptoms may exist together with a correspondingly increased presumption that locomotor ataxia is their cause.

(3) That any one of the three symptoms, or a combination of any two, or of all three, may exist with a varying degree of evidence of spinal disease.

(4) That occasionally a case which commences with purely ocular symptoms may develop with comparative rapidity characteristic symptoms of the spinal lesions of locomotor ataxia.

Kunn's case is interesting in that, although the patient had paralysis of the right internal rectus, he was able to use the right eye for fixation. On looking to the extreme right the left eye turned inward to about the normal limit, the right eye remaining quiescent in the outer angle of the orbit, the left eye then returned slowly to the median line or slightly upward or downward. These movements of the one eye independently of the other, show a disassociation in the movements of the two eyes. Kunn has seen this also in six other cases of tabes.

Oliver's article is an elaborate resumé of the ocular symptoms found in the various stages of posterior sclerosis.

Holden's reports of his cases of acromegaly are very instructive. He finds that at first the enlargement of the pituitary body compresses the

posterior portion of the chiasma, and then flattens and forces upward the middle portion of it, the anterior portion of the chiasma, being protected by bone, at first escapes. Later, by the forcing forward of the anterior wall of the pituitary fossa, the anterior portion of the chiasma is encroached upon by the pituitary body and arched directly forward. Finally the chiasma may be divided completely.

The glandular enlargement of the pituitary body in acromelagy always remains within its capsule and never penetrates the chiasma, as malignant tumours of the pituitary body may do. Hence the pressure on the chiasma is diffuse, and the resulting degeneration in the chiasma need not be exactly at the seat of pressure. Further, the increased pressure may interfere with the function of large portions of the chiasma, but often only slightly, so that the defect in the visual field is not absolute, but for colours only.

There may be much variety in the shape of the fields. If the pituitary body be enlarged symmetrically, the chiasma will probably be compressed posteriorly and flattened out laterally. With diffuse pressure on the chiasma in its entire lateral extent, there will probably be concentric contraction of the visual field; but if the median portion of the chiasma is the more compressed, as is frequently the case, the crossed fibres of the chiasma will be mainly interfered with and, as a result, there will be bitemporal hemianopsia.

If one side of the pituitary body enlarges more than the other, for a time, one tract alone may be compressed, causing homonymous hemianopsia. Again, the atrophy in one optic nerve may differ from that in the other, because one has been compressed against a rigid anterior cerebral artery whilst the other has been compressed against soft brain matter.

Broca believes that the optic nerve may be compressed by a contracted optic foramen, and in one of Holden's cases the foramen was contracted, but there were no signs of pressure on the nerve.

Finally, optic neuritis is sometimes present and the nerve fibres may be compressed as a result of an interstitial neuritis, but neuritis was not present in any of Holden's cases.

Two hundred cases of acromegaly have been reported, and in fifty per cent. of these disturbances of vision were present. In more than fifty per cent. of these with visual disturbances, there was a concentric limitation of the visual field; and in somewhat less than fifty per cent. there was bitemporal hemianopsia, absolute or for colour only, with or without some contraction of the nasal portions of the field. In less than a dozen cases there was homonymous hemianopsia, and in one case

there was found a typical nasal hemianopsia. The type of contraction often changes as the disease advances.

Eye Changes in Cardiac Disease.

VALUDE. "Visual and Ophthalmoscopic Changes of Cardiac Origin." *Annales d'Oculistique, March, 1900.*

Valude reports the case of a man suffering from hypertrophied heart without any valvular lesion. The face was cyanosed and the conjunctivæ were yellowish-red with marked pericorneal injection. The urine contained neither sugar nor albumin. Vision was reduced to one-half the normal in the right eye, and one-twentieth the normal in the left eye. There was no refractive error. The retinal veins were variocose with some dilatation of the corresponding arteries. The veins were so dilated that they covered nearly the whole ophthalmoscopic field. Vision varied somewhat, although it was always better in the right eye. After the lapse of a month the patient died.

The autopsy showed a dilated heart with thickened and sclerosed walls but no valvular lesion. The thoracic and abdominal viscera exhibited the characteristic changes due to the cardiac condition. The brain was greatly congested, the veins being dilated and tortuous.

A blood discoloured spot was found around the fissure of Sylvius and the angular gyrus on both sides, extending in one direction towards the occipital lobe and in the other towards that portion of the frontal lobe which lies under the anterior ascending frontal convolution. These portions of the brain were almost black from extravasated blood, although the entire surface of the organ was of the colour of wine dregs.

On section of the brain, particularly in the right hemisphere, the grey substance corresponding with the angular gyrus was of a violet colour, due to petechial hæmorrhages. The regions of the occipital and ascending frontal convolutions were thus marked but to a less extent. There was no change in the striated bodies or in the optic tract. The ventricles were normal.

Valude considers the lowered visual acuity as due to the central lesions.

Lachrymal Apparatus.

DONALD GUNN. "Lachrymal Obstruction in the young." *Ophthalmic Review, February, 1900.*

VEILLON AND MORAX. "Gangrenous Pericystitis." *Annales d'Oculistique, March, 1900.*

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Du Gourlay. "Treatment of Lesions of the Lachrymal Apparatus by Electricity." *Annales d'Oculistique, May, 1900.*

Steinitz. "Treatment of Suppurative Dacryocystitis with soluble bougies." *Klin. Monatsblätter f. Augenheilkunde, May, 1900.*

Stephenson. "The Place of Protargol in Eye Work." *Edin. Med. Journal.*

Mr. Gunn considers lacnrymal obstruction to be most common in adults past middle life and in young children. In the former, an obvious cause is often not to be made out, whereas in children it is very commonly traceable.

In newly born infants with lachrymal abscess, the dilatation of the sac must have occurred during intra-uterine life, but as the lump which is noticed at birth does not inflame for a week or two later, after infection has occurred, Gunn regards the condition as one of congenital mucocele.

Some of these infantile cases show on probing the presence of a large cavity occupying the position of the lachrymal duct, filled with an excessive amount of mucopus. The cavity is really the dilated duct, the dilatation being due to obstruction of its orifice during fœtal life.

As to the nature of the obstruction; there may be an imperforate condition of the mucous lining of the duct where it enters the nasal cavity. The cartilages representing the lachrymal, superior maxillary and inferior turbinated bones may be at fault. Finally, certain small cartilages in the fœtal nose, which normally disappear, may remain and act as an obstruction.

As the secretion of tears is probably very slight in the fœtus, the contents of the cavity must be mainly the secretion of the mucous and acinous glands of the sac and duct.

Mr. Gunn groups the cases into :—(1) those in which the trouble was present at birth or soon after; (2) those in which there was no symptom of lachrymal trouble for the first few years, but in which lachrymal abscess developed later on. In the first group there are two types of cases; one in which the obstruction has been present at or before birth and there is often a cavity, and the other type where the symptoms develop a little later, generally associated with a conjunctivitis, but in which there is no dilated duct. In the second group there are also two types of cases; the one occurring in syphilitic children, and often associated with interstitial keratitis; and the other in cases of tuberculous disease of the bones of the nose or orbit causing the obstruction.

As to the treatment; those with membranous occlusion rapidly re-

cover after slight probing, but in those having cartilaginous occlusion, a stylet had better be left in, the stylet being of lead wire the lower end of which is drawn out of the nostril and turned up over the alæ nasi. In the second type of the first group, the treatment was repeated emptying of the sac by pressure together with instillation of chloride of zinc. The treatment of the second is most unsatisfactory.

Veillon and Morax report a case of pericystic abscess with great swelling of the lids, high temperature, and septic intoxication symptoms. The abscess broke, and in a few days a sphacelus was discharged. The case slowly recovered, but before cure was effected, two small exostoses appeared at the level of the canal; these were rapidly absorbed. Three organisms were found, one a streptococcus of aërobic type and two of anaërobic nature.

Rollet divides the lachrymal tumours into two classes, one of which communicates with the lachrymal sac, the other does not. He compares them to fistula in ano or a perivesical tumour. The first group he treats by extirpation of the sac, the second by incision and curetting.

Ricchi, as a result of the bacteriological examination of twelve cases of lachrymal abscess, found mainly the pyogenic organisms proper to putrefaction, and in a later case, the Actinomyces albus. In two others he found the Saccharomyces albus and the Saccharomyces minor.

Dr. Gourlay employs electricity in two ways. (1) The constant current, as in electrolysis for the treatment of stricture and dilatation of the sac; the stopping of catarrhal and purulent secretion; and in greater intensity, for cauterization; (2) the induced current as a muscle stimulant. He reports fifty cures out of sixty cases, and only one complete failure.

Steinitz uses cacao butter bougies, 3 mm. long and 1 mm. thick, impregnated with a drug, generally 5 per cent. protargol, and argentum colloidale, 1 per cent. The bougie is introduced through a silver tube, 1 mm. in diameter.

Stephenson slits the lower canaliculus in dacryocystitis and washes out the dilated sac with a 5 to 10 per cent. solution of protargol, until no pus returns with the fluid. Probes are passed at the same time to dilate the stricture.

Potassium Iodide and Pilocarpine in Eye Diseases.

Burnham. "Successful Treatment of Important Cases of Diseases of the Eyes by the Combined Method of Hydrargyrum and Potassium Iodide Internally and Pilocarpin Externally." *Canadian Practitioner, Oct., 1900.*

Dr. Burnham's cases were: (1) a chronic iridocyclitis of two and a half years' duration with relapses and bound-down pupil, with masses

of exudation in it. (2) Chronic iritis with posterior synechia and lymph in the pupil. (3) Specific paralysis of the motor nerves of the left eye of four years standing.

Burnham uses the drugs in specific and non-specific cases. The pilocarpin is given in $^1/_{12}$ to $\frac{1}{4}$ grain doses, hypodermically, for from 6 to 21 days, once daily, unless there be nausea, headache, or oppression over the heart, when he desists for a few days. This is repeated after an interval of three to eight weeks. The patient remains in bed for two or three hours after the injection, a profuse flow of perspiration and saliva following. Treatment is continued as long as any improvement is noted, even for three or four years.

Colour Blindness.

Eldridge-Green. "Inefficiency of the Board of Trade Tests for Colour Blindness." *Lancet, May 26, 1900.*

The author holds that any tests to be efficient must be based on the facts of colour blindness, not on any theory. He claims that Holmgren's test is not efficient. The person tested should pick out the colours as colours and not as shades, and he need only know the names of the fundamental colours, red, yellow, green, and blue. A man who names a green light as red must either be colour blind or very dangerously ignorant of colours. Again, a person with central scotoma will escape detection by the Holmgren test, and as a light at a distance occupies a central portion of the field of vision, these persons will be found to recognize colours when close to them but not when they are at a distance.

Mr. Green uses two tests, the first being the classification test, the other the lantern test. The former consists of four test colours and one hundred and eighty confusion colours. The lantern test consists of a lantern containing thirteen slides, seven slides containing coloured glasses, and six containing modified glasses. These reproduce rather closely the conditions under which marine or railway employees would have to distinguish the colours, and detect any case of central scotoma.

Blue Blindness in Granular Kidney.

Gerhardt. "Blue Blindness in Granular Kidney." *Annals of Ophthalmology, July, 1900.*

Gerhardt draws attention to the discovery of König's of the presence of blue blindness in granular disease of the kidney.

Trachoma.

MASSELON. "The Jequirity Treatment." *Die Ophthal. Klinik, May 20, 1900.*

A. SCHIELE. "Iodic Acid, Gallican and Iodogallican in the Treatment of Trachoma." *Centralblatt f. prakt. Augenheilkunde, April and May, 1900.*

BOECKMANN. "Trachomatous Pannus and Periectomy." *Amer. Jour. of Ophthalmology, April, 1900.*

ADLER. "More Recent Methods of Treatment of Trachoma." *Wiener Med. Presse, Feb. 11, 1900.*

Masselon regrets the diminished use of jequirity in trachoma. The drug should only be used where there is but little secretion and, as it acts especially on the cornea, it is indicated in pannus and sclerosing opacities of the cornea. The lids should be everted and the exposed *cul-de-sacs* pressed together, so that the cornea is completely hidden; a layer of freshly prepared powdered jequirity freed from all oil is now dusted on the exposed conjunctiva, and it is left on from two to five minutes. The lids are now carefully cleansed with a swab of boracic acid solution. This treatment may be repeated in a few days time, if necessary, but it is better to get a marked reaction on the first application rather than to repeat with several weak reactions, as a certain degree of toleration seems to arise after the first application.

Schiele uses iodic acid in stick form, applying it to the granular areas after instilling cocaine. The mucosa becomes dry and brown, but no scars are left. He also applies 5 per cent. of iodic acid with a brush or instills a 1 to 3 per cent. solution. In pannus, he uses iodic acid as a salve of $1\frac{1}{2}$ per cent. strength. The internal administration of potassium iodide assists. Treatment is kept up until recovery results, in say, one to two months, and in the dry cases for a longer period.

Gallican is a white powder soluble in hot water, and is dusted over the affected areas once or twice daily. It is especially indicated in beginning trachoma and in the cicatricial stages.

Iodogallican is a dark gray powder insoluble in water and contains bismuth, 38.4 and iodine 23.6. It is used in powder form and is slightly caustic. It is indicated in superficial and deep infiltrations of the cornea, and heals up an ulcer, probably, partly due to its drying effect upon the floor of the ulcer, and partly to its antiseptic action. Marked irritative symptoms contra-indicate its use.

J. W. Stirling.

Obstetrics.

UNDER THE CHARGE OF WILLIAM GARDNER.

The Etiology and Nature of Puerperal Infection.

Thirteenth International Congress of Medicine, held in Paris, August 2-9, 1900. Section on Obstetrics.

Drs. Doléris of Paris, Menge and Krönig of Leipzig, and Pestalozza of Florence, presented important and valuable communications on this subject.

M. Doléris stated that Pasteur determined the fact of the microbic nature of puerperal septicæmia. The ordinary pathogenic germs of puerperal septicæmia are :—the streptococcus pyogenes (the most common), the staphylococcus aureus, the gonococcus, the bacterium coli commune, etc. The germs may be anaërobic or mixed. It is generally admitted that certain anaërobic saprophytes can develop and act like true pathogenic germs in the presence of favourable conditions, such as is the case in retention of portions of placental tissue. When different species are associated, infection is more certainly produced.

Puerperal infection generally kills by toxæmia, but the lesions produced may also contribute to the production of death, as is the case in hyperacute peritonitis resulting in intestinal paralysis.

The staphylococcus aureus may cause death by visceral metastases to the pericardium, pleura, kidney, etc. The gonococcus, the colon bacillus, the bacillus of diphtheria, and the pneumococcus, may exceptionally produce puerperal infection, but their active rôle in the production of puerperal lesions is confirmed by the production of many abscesses. Their rôle in the production of septicæmia is less well established. Doléris concludes that generally the infection is heterogenetic. He considers that occasionally the infection may be autogenetic, on account of the possible pre-existence of pathogenic germs in the secretions of pregnant women. He feels bound to admit reviviscence *in situ* of these pathogenic germs pre-existing in the uterine cervix and Fallopian tubes, and the possibility of such an infection becoming generalized after confinement without any fresh importation of pathogenic germs from without. Therefore he is disinclined to abandon the local application of the antiseptic method *præ partum* and *per partum*.

Dr. Krönig defined puerperal fever as a disease following confinement, in which pathogenic bacteria, starting from wounds produced during labour, resulted in damage to the organism. An elevation of

temperature above the normal point invariably accompanies such an infection.

Among pathogenic bacteria it is not possible at present to distinguish between those which act solely in virtue of their toxic properties, and infectious bacteria which have the property of penetrating into the tissues of the organism. Krönig states that at present the bacteria which may be considered as capable of giving rise to puerperal fever are :—streptococcus pyogenes puerpalis, staphylococcus pyogenes aureus, gonococcus Neisser, bacterium coli, bacillus diphtheriæ, diplococcus pneumoniæ, and various bacteria, obligate anaërobes, whose biological properties differ essentially from those of pathogenic bacteria.

While not much is at present known as regards the action of these anaërobic bacteria, the theory that the clinical and marked phenomena of puerperal fever may be caused by the absorption of the products of their nutritive activity (sapræmia), must be questioned. In his opinion, sapræmia without penetration of the bacteria into the tissues, is rare. Recent observations have established that saprophytic anaërobic bacteria may, by their penetration into the tissues, cause the death of a puerperal woman.

We are met with insurmountable difficulties in the endeavour to determine the degree of virulence of the bacteria which give rise to puerperal fever. Experience has demonstrated that, generally, virulence is diminished when the bacterium concerned has remained for some time in a saprophytic state.

Besides a general predisposition to puerperal infection, a local predisposition exists in the case of insufficient hæmostasis in the genital passages, or in the case of extensive lesions of the genital organs. The primary infective process may be situated in the wounds of the perineum, vagina, cervix, and in the whole endometrium, remain localized there, or else spread by continuity, or by metastatic infection. This extension most frequently occurs when the endometrium and the placental site are affected. Rarely, infection arises in infected wounds of the cervix; most rarely, it starts from infected wounds of the vagina and perineum. The blood vessels and lymph canals are almost as often utilised in the propogation of infectious microbes in the organism. The staphylococcus pyogenes puerperalis has the greatest tendency to overstep the limits of the primary focus, though the majority of cases of infection by this micro-organism limit themselves to the endometrium, or tend to get well of themselves.

Menge, who agreed with Krönig as to the bacteria generally concerned in puerperal infection, stated that the infection caused by these bacteria may be heterogenetic or autogenetic. Autogenetic infection,

he defined as an infection produced by pathogenic bacteria that have lived in the condition of saprophytes before labour on the integuments of the external genitals, or in the genital canal of the woman, and which during labour, or immediately after it, invade the organism through puerperal wounds and set up disease. Heterogenetic infection, on the other hand, is an infection produced by pathogenic bacteria, carried by the air, by instruments, or by the hands of persons in attendance, to the puerperal wounds, and thence infect the organism.

Menge considers that puerperal fever due to infection by the gonococcus, having as its starting point a urethral, vaginal, or vesical gonorrhœa, should not, any more than the infection of puerperal wounds proceeding from the blood or infectious foci situated on the external and internal genital organs before confinement, be counted among autogenetic puerperal infections, because in these cases the infectious agent has not a saprophytic character. It is a case simply of the expansion of an infectious process pre-existent in the body.

As the streptococcus pyogenes puerpalis, staphylococcus pyogenes aureus, the bacterium coli, the gonococcus Neisser, the bacillus diphtheriæ, and the diplococcus pneumoniæ, do not live in the condition of saprophytes in the vaginal secretions of pregnant women, an autogenetic infection by these bacteria cannot have as a starting point the vaginal secretion of such women. He considers that an autogenetic infection, produced by anaërobic bacteria of puerperal fever coming from the vaginal secretion, is improbable. Still it cannot be absolutely rejected, because we have not as yet succeeded in distinguishing the anaërobes of puerperal fever from the saprophytic anaërobes of the vaginal secretion of pregnant women, in regard to their biological properties.

Clinical facts seem to warrant a favourable prognosis, when the infection is autogenetic and arises from infection by pathogenic bacteria that have lived as saprophytes on the skin of the external genitals. While it cannot be denied that pathogenic bacteria, starting from the integuments of the external genitals, may after confinement find their way even into the uterine cavity, still an autogenetic infection produced by bacteria that have lived as saprophytes in the cervical canal, or in the uterine cavity, or in the tubes, can be absolutely rejected, for these organs never contain bacteria in the condition of saprophytes.

While autogenetic infection may be to a certain extent be disregarded, heterogenetic infection must be regarded as of the highest importance. The factors of importance in an infection are the virulence of the infective germs, the predisposition of the infected individual, and the number of the infective agents. The air, which is poor in germs, plays

hardly any part in the production of a heterogenetic puerperal infection. When the instruments have been sterilized, the hands of persons in charge of the confinement become the essential carriers of the infective agents. Menge recommends as prophylactic measures the employment of sterilised rubber gloves for obstetrical examinations and operations, and the limitation of internal exploration. He also suggests that the accoucheur should be limited entirely to obstetrical practice.

Pestalozza gave an analysis of the results obtained in the obstetrical clinic of Florence, during the five years from 1895 to 1899, comprising a total of 4015 women. In 1895, disinfection of the vagina in a healthy woman in labour was discontinued.

There were delivered 3847 women in the lying-in department in the five years. These were not subjected to prophylactic disinfection of the vagina, or to vaginal or uterine injections after confinement, even in cases of artificial delivery. Those measures were reserved for very rare cases of women on whom suspicious manipulations or examinations had been practiced before admission. Of the women admitted to the lying-in department, 32 had to be transferred to the isolation pavilion, on account of infectious symptoms of gravity; and these were for the most part women in whom labour had begun some time before admin-sion. Of the 32 so transferred, 30 were discharged cured. To the isolation pavilion, there were admitted 168 women, after having been delivered outside; of these 25 died.

The results of the author's clinical, anatomical and bacteriological researches on 200 women in the isolation pavilion, led him to the following conclusions:—

(1) The aseptic course of the puerperium depends upon the rigorous application of procedures of disinfection of the external genital organs of the woman, and of the hands and instruments of the obstetrician.

(2) Disinfection of the vagina of a healthy woman in labour is to be condemned as superfluous and dangerous.

(3) In cases where doubt as to the aseptic condition of the vagina is justifiable, *i.e.*, in women suffering from infectious disease of the genital apparatus, the best thing to be done is to abstain from vaginal examination during delivery.

(4) Disinfection of the vulva of the patient and of the hands of the obstetrician, is sufficient to obviate all possibility of infection during delivery, but there remains the possibility of a puerperal fever arising from intoxication (sapræmia).

(5) An antiseptic system properly managed should also include precautions necessary to limit the possibility of putrid intoxication. That is to say, the prevention of the premature rupture of the amniotic sac,

the union by immediate suture of every vulvar, vaginal, and cervical wound, and, especially, careful assistance during delivery, to the exclusion of all premature manœuvres of intervention. This is the best means of avoiding the retention of shreds of membrane, placental fragments, and blood clots, which would present too favourable a soil for putrefactive processes.

(6) After labour, all vaginal or uterine injections should be abstained from. A large number of cases of infection must be referred to the imprudent use of these measures.

(7) Should the phenomena of infection develop, it is of the greatest importance to obtain an exact knowledge of the point of entrance of infection; that is to say, whether there exists a vulvar, vaginal, cervical, or uterine infection, or a combination of these. The practice of immediately having recourse in every case of fever to uterine injections, is strongly to be condemned. There is reason to believe that they very often give occasion to extension of the infective process. Especially in cases where there may seem to be ground for the suspicion that the assistance has been inperfect, from the point of view of antisepsis, one must satisfy oneself as to the condition of the cervix uteri. All treatment of the infection should also be preceded by a careful diagnosis of the point of entry of the infection. This diagnosis, in the present state of knowledge, is of much greater importance from the practical point of view than the diagnosis of the nature of the infectious germs, a matter which is still surrounded by too many difficulties.

(8) Bacteriological researches confirm the fact of the frequent occurrence of streptococcus infection. The streptococcus is the only agent which the author has been able to discover in cases of puerperal peritonitis or in metastatic foci. As for staphylococcic infection, he has been able to find it only in the form of multiple abscesses in the substance of the uterus (cases of criminal abortion).

Bacterioscopic examination is not always sufficient, because there are forms of streptococci anaërobic in development, that are often met with in forms of sapræmia, and which have not manifested any pathogenic property. The B. coli has not been found by the author, except in cases of intrapartum fever arising from decomposition of the amniotic fluid.

Lastly, there are cases that might seem to establish the possibility of diplococcic infection. In all probability, however, in such cases there exist forms of sapræmia, or else the transport of decomposed fragments of thrombus has prepared the soil for growth of the diplococci which were on the wound.

D. J. Evans.

Reviews and Notices of Books.

A Handbook for Nurses. By J. K. Watson, M.D., Edin., Late House-Surgeon, Essex and Colchester Hospital, etc. American Edition, under the supervision of A. A. Stevens, A.M., M.D., Professor of Pathology in the Woman's Medical College of Pennsylvania, etc., etc. Philadelphia, W. B. Saunders, 1900. Canadian Agents, J. A. Carveth & Co., Toronto. Price, $1.50.

This is the American edition of a book which appeared last year in England, its publication on this continent being supervised by Dr. Stevens, of Philadelphia.

It is divided into four parts, the first of which deals with anatomy and physiology. The subject is presented in such a manner as to be easily understood by a beginner, while at the same time it contains all that is essential for a nurse to know in this connection. The second part opens with a chapter on "The management and nursing of the sick," in general, the daily routine of both hospital and private nursing being described in a clear and concise manner. While it is impossible to notice each chapter in detail, those upon operations, bandaging, and emergencies are especially to be commended. Part third describes the special nursing required in disease of the various systems, a chapter each being devoted to the respiratory, circulatory, digestive systems, etc. Part four contains a chapter upon child-birth and the care of the lying-in woman, and one on gynæcological cases. There is also an appendix describing the appliances with which every nurse should be familiar, such as the cold pack, ice bags, etc.

The book is neatly bound, printed on good paper, and contains numerous illustrations in the text. A special feature is that the headings of paragraphs are printed at the margin in black type, thus enabling ready reference to be made to any subject. There are a few typographical errors which can be corrected in a later edition.

Taken as a whole, the work is well qualified to supply the place for which it is intended and we predict that it will have a ready sale. We have much pleasure in recommending it as a thoroughly reliable text-book.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The Thirtieth Annual Meeting, October 5th, 1900.

The retiring President, Dr. J. G. Adami, occupied the chair.

The minutes of the last annual meeting were read and confirmed.

The Secretary, Dr. A. J. Bazin, reported that 19 regular meetings had been held during the session, the average attendance being 28, the largest number present at one meeting, 47. Eight new members had been enrolled, making the total 161; this, with 27 temporary members, made a grand total of 188. During the year the society lost two members by death, Drs. T. D. Reed and Charles O'Connor.

The routine work of the session comprised 92 items; 3 general discussions had been held, 13 papers and 24 case reports presented, 11 living cases and 40 pathological specimens shown. In addition to this, the society had been engaged in business of more public character, consisting of the formation of a medical defense association, the compilation of a Canadian Addendum to the British Pharmacopœia, and the providing of hospital accommodation for infectious dseases in the western portion of the city. A milk commission has also been created by the society.

The Treasurer, Dr. J. M. Jack, read the annual report, showing that the receipts for the year were $666.54 and the expenditure $329.75, which, with the cash balance of the previous year, left a balance of $527.16 on hand. After deducting all outstanding liabilities, the nett assets of the society amounted to $1,232.16.

In moving the adoption of the report, the question of obtaining a permanent home for the society was brought up, and Dr. Buller offered to subscribe $100 a year for five years towards this object provided any other member would do the same.

The following officers were elected for the session 1900-01:—

President—Dr. Jas. Perrigo.

First Vice-President—Dr. J. W. Stirling.

Second Vice-President—Dr. J. G. McCarthy.

Treasurer—Dr. J. M. Jack (re-elected).

Secretary—Dr. A. J. Bazin (re-elected).

Librarian—Dr. F. A. L. Lockhart (re-elected).

Council—Drs. J. G. Adami, J. M. Elder, and F. Buller.

Dr. McCarthy having taken the chair, Dr. Adami read the retiring President's annual address, of which the following is an abstract:—

President's Address.

It is customary in our Society that, following upon the report of the Secretary upon the year's work, the President also reviews the proceedings of the Society during the past session. Necessarily in such a review there is a danger of repetition—it, however, is of undoubted use as affording opportunity for calling fuller attention to certain of the features of the Secretary's report which may stand a fuller treatment than that allowed by the statistical character of what the Secretary brings before us. For example, the mere statement that so many papers have been read, so many discussions held, so many living cases and pathological specimens brought forward before the Society, while it is true pointing to the continued activity of the Society, does not indicate the quality of the material brought before us.

It is well to have this opportunity of pointing out that the quality of material brought up, not only has been equal to that in previous sessions, but is an indication that our profession here in Montreal is even more active in medical and surgical work than ever. We have for example, Dr. Shepherd bringing before us the first case of Blastomycetic dermatitis recognized north of the border; Dr. Armstrong has published to us the results of his studies and operations upon gastric ulcer, in the operative treatment of which condition he is one of the pioneers; Dr. Finley has reported what I believe is the first case of perforative œsophageal ulcer recognized here. Dr. Bell has brought forward cases of laryngectomy, in which operation he, again, is one of the pioneers in Canada, while we have been shewn material of the first case of antinomycosis in man recognized in this country, in a patient under the same surgeon.

Yet other contributions showing the same activity and advance in medical observation and treatment, have been, Dr. Elder's paper upon Electrical Burns—a subject as yet little written about—one which in the increasing employment of electricity, demands increased study; Dr. Evans' thoughtful and suggestive paper upon the Etiology of the Nausea and Vomiting of Pregnancy, in which he has harmonised and explained various physiological and pathological phenomena in a way which I am glad to say is being most favorably received by gynæcologists elsewhere; Dr. Wyatt Johnston's paper upon Disability and Disease due to Accident, in which he has introduced to the profession upon this side the remarkable work that has been accomplished in Germany of late years in estimating the money value and compensation necessary for diseases and injuries acquired by workmen and others as a result

of accident. His tables will be of especial value to those called upon to testify or advise upon the extent of disability set up by various injuries and the compensation to be allowed for the same.

It is hard with so much good material before us to select and specially mention several contributions, but I think that I ought to call attention to the valuable studies of Drs. Martin and Harvey Jones upon the Existence of Renal Casts without Albuminuria—to Dr. Shirres' singularly full studies upon a case of Porencephaly and the resulting tracts of degeneration—to Dr. England's remarkable case of the successful treatment of traumatic Rupture of the Rectum—and to Dr. Garrow's cases of ligature of the right common carotid for aneurysm.

The contributions that I have thus selected demonstrate, if anything be needed to demonstrate, the fact that our profession here in Montreal is accomplishing sound work in the forefront of medical and surgical advance.

The two discussions held—upon Gonorrhœa and upon Life Insurance —brought forward other able contributions from a large number of the members. The pity is that the papers contributed by those opening the subjects did not elicit quite so much discussion as we have had on previous occasions. Here I would point out the very great difficulty which your Council find in choosing subjects which shall promote discussions which shall be of general interest and shall excite active and speaking interest on the part of the members generally.

Turning now to the other work accomplished by the society I may point out that very many subjects have been taken up, notably, on Medical Defence, on providing an Infectious Hospital for the west end of the city and district, and upon Milk Inspection. Upon this last I need here say nothing inasmuch as I hope that Dr. Williams, the Secretary of the Milk Committee, will report progress to the Society.

With regard to Medical Defence we brought this subject before the annual meeting of the Canadian Medical Association and a committee has been appointed to report upon the subject at their next meeting in Winnipeg. The matter of the Infectious Hospital is still in debate, everything depending upon what the Town of Westmount decides to do. If the town be willing to build a hospital of suitable size, your Council, acting upon instructions received from you, have told the authorities there that the society will be willing to do what it can to interest the householders of Montreal in the matter.

Certainly the amount of routine business that has been brought before the society during the last two years, has been more than the society can well accomplish, and I can cordially sympathise with those members who feel that we have undertaken too much, I recognise that all

this business, brought on as it has been at the end of the meetings when the members have already had a long sitting, has been objectionable and is possibly one of the causes why the attendance has tended to fall off. This may indeed, be one of the causes. Nevertheless it has been extremely difficult to lessen that business. Your Council has striven to cut the business part of the proceedings to the very smallest possible volume. It has, however, been extremely difficult to refuse to consider these matters of professional or public interest brought before us.

I can only suggest that in the future when in the course of the regular scientific work of the society or otherwise, matters are brought up upon which the society feels it should take action, those matters be referred back to the Council with instructions not to come before the society until everything in connection with such matters has been cleared up, or in other words that the Council be given fuller powers to carry on the business of the society. Secondly, the undoubted discomfort of the seats and the relative misery in which members found themselves during the meetings, has, I cannot but think, been a serious factor. Members were willing to stand the discomfort for one year but not for two. In the third place, the amount of business, as already indicated, may have had something to do with the matter, and in the fourth, the late notification of the programmes.

But here let me say that for this late distribution I cannot hold the secretary to blame. It has been the fault of those who, having promised contributions, have at the last moment failed to fulfil their promises. At nearly every meeting last term, the secretary found himself at the last moment through this conduct on the part of contributors, obliged to telephone or rush round in order to fill up the programme.

There remains the pious duty of calling to mind the loss sustained by the society in the death of one of its most constant and most interested members, the late Dr. Thomas D. Reed. Few members attended so regularly, few showed themselves so widely read in the by-paths and even the main paths of medicine than he did, and for years he served the society officially as its honorary librarian. We miss his nervous manner and his familiar face at our meetings. In the late Dr. C. O'Connor we have with equal suddenness lost one of our younger members who had before him a future full of promise.

Lastly, I cannot sit down without cordially thanking the other officers of the society for the aid given during the past session. No one can have had a better and more energetic secretary to do all the hard work of his office, than I had in Dr. Bazin, and I doubt if any medical society on this continent possesses a more business-like and capable treasurer than Dr. Jack has for many years shown himself to be.

THE

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A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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THE TEACHING OF HYGIENCE TO MEDICAL STUDENTS AND TO THE PUBLIC.

The remarks of Dr. E. P. Lachapelle upon this topic in another page tend to show the increasing importance which is being attached to this branch of medicine. We would especially emphasize the view he maintains that every practitioner has to know not only his hygienic duty towards his patient, but also towards the public as well. The result of successful hygienic teaching in any country should be apparent in the lowering of the death rate and disease rate. To effect this every physician has not only to know the subject himself, but to spread his knowledge amongst his patients and the public, hence the necessity for a thorough college training in this branch.

As an instance of what may be done in the way of educating the public, we may mention that in the English town of Brighton over 80 per cent. of all cases of contagious diseases are treated in the municipal hospital. Education of the public by medical men in the surest means of carrying out successfully and reaping the benefit of those measures, for the immediate execution of which we look to the public board.

Dr. Lachapelle has had every opportunity of studying the question both as a sanitarian and a teacher of hygiene, and his counsel will merit

attentive study by practitioners equally with the students to whom it was directly addressed.

With us, specialists in hygiene hardly exist as yet as a class, and it is mainly upon the general practitioner that the burden of preventive medicine rests.

THE PLAGUE AT GLASGOW.

Now that the small but alarming epidemic of plague at Glasgow has come to an end, it is of use to review the circumstances connected with it, thereby to gain some knowledge which might be of aid should the plague break out in any of the cities on this continent. For we may take it that conditions in Glasgow are very similar to those present in the larger cities on this side.

The epidemic broke out on the 3rd of August. Two individuals, a child and its grandmother, sickened suddenly, the child dying in four the grandmother in six days. There had been no recognisable connection between the individuals or families to which they belonged and any previous case of the disease. The father of the child, it is true, worked at the docks some two miles away, but he had to deal only with home as distinct from foreign shipping and he did not contract the disease until after all the other members of his household. The symptoms in the two cases were those of acute enteritis and certificates of death were given for zymotic enteritis and acute enteritis respectively.

The day after the wake on these two cases, the husband of the grandmother fell ill; but he was not removed to the hospital until fifteen days had elapsed and then he was supposed to be suffering from typhoid fever. In the meantime, on the 19th of August, sudden illness developed in an adjacent street, in a family, members of which had been present at the wake, this time a child of ten being taken ill. On the 21st acute pneumonia was diagnosed and the child died. A wake was also held on this case. In rapid succession four other members of this family fell ill and on the 25th a member of another family who also associated with the first, developed symptoms resembling typhus fever.

Only upon the 25th of August did the possibility of the disease being plague first occur to the resident staff of the Belvidere Infectious Hospital, to which many of these cases had been taken. On the microscopical examination of the fluid from a bubo in one of the cases the staff found what they considered to be the bacillus pestis, a conclusion which was eventually abundantly confirmed by Professor Muir of Glasgow University.

Immediately every effort was made to trace the cases to a common focus, the infected area was mapped out, in this area the ashpits were

emptied three times a week and washed weekly with a whitewash of chloride of lime; back courts in a dirty condition were hosed every night with a solution of chloride of lime (1-100); every house was inspected and there was complete medical inspection of the whole district. The occupants of the infected tenements and all who had come into contact with those showing the disease were asked to be inoculated with Yersin's serum or with Haffkine's prophylactic. Hand-bills were distributed offering the services of the medical staff at any time on application to the nearest police office. There was a thorough inspection of the Lascar and other crews of ships from infected countries. All patients were immediately removed to hospital, those coming in contact with them being taken to a reception house and kept there. The infected houses were fumigated, first with liquified sulphur dioxide and afterwards with formic aldehyde, their walls, ceiling, flooring, woodwork, etc., being also sprayed with a solution of formalin, 1 gallon to 50 gallons of water.

A pamphlet descriptive of the varieties of the plague was circulated among practitioners, hospital and dispensary attendants who were asked to make special note of any doubtful glandular affections. No attempt was made to hush up the fact that the plague had broken out and all the steps were taken deliberately and with thoroughness.

The result of these precautions, as again, we should add, of the relative insusceptibility of the Anglo-Saxon, was that after September 19th no further cases of plague were admitted to the hospital and that the total number of admissions of cases of definitely recognisable plague was restricted to 27, of whom only five died. Of these 27 cases eight only could be classed as severe, seven were of extreme mildness, so mild that save for their association with recognisable cases a suggestion of plague would scarcely have been raised, and 12 fell into a middle class.

These mild and atypical cases are those indeed in which the danger lies. It is to be noted from the above description that in the earliest cases what was noticed was the intestinal disturbance more than anything else. In those admitted to hospital some of the cases had a solitary bubo, others had a more generalised form of the disease in which several groups of glands were involved. In the mildest case pain in some group of the lymphatic glands rather than the actual bubo might alone be present. But, as pointed out by Drs. Brownlee and McClure, all the cases had certain groups of symptoms in common, notably the initial headache, the general malaise, nausea and vomiting followed by almost uniform complaints of pain in some one or other group of lymphatic glands, while in the milder cases, the patients have looked ill out of all proportion to the amount of fever present and the degree of enlargement of the lymphatic glands.

Nine of the cases were examined bacteriologically by Professor Muir and Dr. R. M. Buchannan, the affected glands being punctured and microscopical examination being made of the fluid obtained. By this method five patients were proved to have suffered from the plague and one post mortem, on another case, afforded enormous numbers of the plague bacilli. It should be noted, in explanation, that where the disease has lasted for some days, the bacilli are often no longer to be obtained from the lesions.

A few words may be said with regard to the precautions in the hospital. There the plague patients were isolated in a separate pavilion surrounded by a high wall ; all the discharges (fæces, urine, sputa, etc.), were placed in a 5 per cent. solution of carbolic acid while in the ward ; they were removed twice a day and boiled in a large autoclave before being passed into the drains ; all soiled linen was boiled for two hours before being removed from the plague enclosure, while the bulk of the patient's clothes were burned upon admission, the rest being disinfected by superheated steam. The nurses and those in attention upon the sick were inoculated with Yersin's serum and they had special overalls for use in the wards. No case of the disease occurred among these attendants.

Lastly a few words may be said with regard to rats. The part played by these animals in disseminating the disease has been of late greatly emphasized. It is interesting to note that in Glasgow not a single infected rat was discovered although they were killed in abundance ; no dead rats were found about the houses and the disease in this instance appears to have been conveyed pre-eminently by personal contact.

We note that an American health officer who visited Glasgow, considers that the medical inspection there was not as thorough as it might have been, and states that in America the precautions taken would have been yet more stringent. If this be the case the conclusion to be drawn is distinctly consoling ; the present wave of plague with our present preventive methods has little chance of gravely affecting Anglo-Saxon communities.

The Morrice Pharmacological Laboratory, now in course of equipment in the new medical buildings of McGill University, has been placed under the charge of Dr. J. T. Halsey, a graduate of the College of Physicians and Surgeons, New York city. After spending some time as Interne at St. Lukes' Hospital in that city, Dr. Halsey determined to direct his energies towards research work in biological and pharmacological subjects. A year of careful work was spent in Professor Baumann's laboratory in Freiburg, and two years more with Profs. Fittig

and Hofmeister in Strasburg. The past two years have been spent in the laboratory of Prof. Hans Meyer in Marburg, where he held the appointment of assistant.

Before leaving Germany, Dr. Halsey selected the greater part of the apparatus necessary for the proper equipment of his laboratory. A portion of this has already arrived in the city and only awaits the completion of the laboratory building to be installed.

It is hoped that after the commencement of the New Year the laboratory will be so far in order as to permit of a series of demonstrations in physiological pharmacology to the more advanced students. Dr. Halsey also hopes to be able to undertake some original research work and will be glad to welcome in the laboratory any qualified persons desirous of pursuing work of this character.

The position of Assistant Gynæcologist to the Royal Victoria Hospital was filled some time ago by the appointment of Walter W. Chipman, B.A., M.D., F.R.C.S.Ed., and in May he assumed the duties of his post.

Dr. Chipman is a Canadian, being the eldest son of William A. Chipman, Esq., of Bridgetown, Nova Scotia. He received his early education at the Bridgetown High School, Horton Academy, and Acadia University, Wolfville, where he took the degree of B.A. with honours, in June, 1890. His medical studies were pursued in Edinburgh, where in 1895 he graduated M.B., C.M., Buchanan Scholar of his year. This scholarship carried with it the position of Resident Surgeon to the University Gynæcological Wards of the Royal Infirmary for one year, under Prof. Simpson and Dr. Berry Hart. He was then appointed Resident Physician to the Royal Maternity Hospital, Edinburgh, where he served under Simpson, Croom, Berry Hart and Freeland Barbour. At this time he was elected a Fellow of the Edinburgh Obstetrical Society.

In the spring of 1897, Dr. Chipman secured the position of House Surgeon to the Bolton Infirmary, Lancashire. A year later he returned to Edinburgh to become the Assistant to Dr. Freeland Barbour, and took the degree of F.R.C.S.Ed., in 1898. In the same year he began work in the laboratory of the Royal College of Physicians under Noël Paton, selecting as the subject for investigation the rabbit's placenta. As a result of this work he was awarded the Freeland Barbour Fellowship of £100, and at the end of his second year's investigations presented a thesis for the degree of M.D. to the University of Edinburgh. This thesis was accepted, and in July of the present year the M.D. degree was conferred *in absentia* and with it a gold medal. In the intervals of his five year's post-graduate work, Dr. Chipman has also been able to make himself familiar with the gynæcology of London and of Paris.

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For the Quarter Ending September 29, 1900.

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THE

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Original Communications.

A CASE OF CONSERVATIVE CÆSAREAN SECTION.*

BY

WILLIAM GARDNER, M.D.,

Professor of Gynæcology in McGill University; Gynæcologist to the Royal Victoria Hospital, Montreal,

With Report of Previous History

BY

DAVID J. EVANS, M.D.,

Lecturer in Obstetrics, McGill University, Montreal.

On September 24th, 1900, I was called by Dr. Morphy of Lachine to see Mrs. R. S., aged 29 years, IIpara, who was shortly expecting her confinement. Dr. Morphy informed me that two years previously he had delivered her of twins at the seventh month of pregnancy, after performing version. The extraction in each case was only accomplished with the greatest difficulty, and both children were born dead.

On examination, I found the patient to be an undersized, well-nourished woman. She presented no evidence of rachitis in the long bones of the limbs or in thorax or head. The heart and lungs were normal. The abdomen was greatly distended, the fundus uteri reaching to the ensiform cartilage. The umbilicus was prominent, the flanks full, and the skin over the abdomen presented the usual pigmentation and lineæ albicantiæ. Fœtal movements were observed.

On palpation, the excavation of the pelvis was found to be unoccupied. The fœtus was in an oblique position, the head resting in the left iliac fossa, while the breech could be felt at the fundus to the right of the middle line. The fœtal back was directed posteriorly, which would account for the fact that at no time could the fœtal heart sounds be heard in spite of repeated auscultation.

Pelvimetry.—The pelvic measurements were as follows:—A. Il., 11 inches; If. Il., 10¼ inches; Ext. conjugate, 6½ inches: Diagonal con-

* Read before the Montreal Medico-Chirurgical Society, Oct. 19, 1900.

jugate, 3¾ inches; Conjugate vera, 3 inches (estimated). By vaginal palpation the promintory could be easily reached. The sacral alæ projected forward into the brim, thus causing a sharp bend in the posterior part of the iliac bones. The lower part of the sacrum and coccyx were sharply bent and projected forward into the pelvic cavity. The pubic bone was thickened in its upper part, further tending to obstruction of the pelvic inlet.

Diagnosis.—A diagnosis of flat rachitic pelvis with marked obstruction of the inlet, was made. An attempt was made to bring the fœtal head into position over the pelvic inlet but without success, as the head seemed to be particularly large.

In view of the peculiar projection into the brim of the alæ of the sacrum and the posterior parts of the iliac bones, and the sharp forward bend of the lower part of the sacrum and coccyx, it was deemed imposible to deliver the child through the natural passages, and therefore it was thought best to recommend Cæsarean section in preference to symphysiotomy. Accordingly, that afternoon the patient was removed to the Royal Victoria Hospital and placed under the charge of Dr. William Gardner.

Report of the operation.

The case was ideally favourable for the saving of both mother and child and conservation of the uterus. The woman was pregnant to full term and had been examined only by Drs. Morphy and Evans besides myself, in each case presumably with aseptic precautions. She was admitted to the gynæcological ward of the Royal Victoria Hospital on the evening of one day. At four o'clock the next morning labour had commenced. Fœtal heart sounds could not be heard, but movements were unmistakable. At eleven o'clock of the morning of the same day when operation was commenced, the os was of the size of a silver dollar. No attempt of any kind to deliver had been made and the temperature was normal. The operation was thus, in the full sense of the word, elective. I was most ably assisted by my colleague, Dr. Garrow of the Surgical Department, and Dr. Casselman, my House-Surgeon.

The incision in the abdominal wall, six or seven inches long, was two-thirds of its length below and the other third above the navel. In doing this my experience amply bore out that of others—how easy it is to wound the uterus. One comes unexpectedly soon through the abdominal wall. Palpation before operation led to more than a suspicion of anterior implantation of the placenta. Palpation of the exposed uterus showed that this was beyond a doubt. Statistics show this position of the placenta in 50 per cent. of the cases.

Dr. Garrow making pressure on the abdominal walls around the uterus,

a six-inch incision was made in the anterior abdominal wall. Dr. Cassellman was directed to control by finger pressure any large bleeding points and, if necessary, to compress the uterine arteries by grasping the cervix. The incision exposed the placenta. It was rapidly peeled off to the right, the membranes ruptured, the child's feet grasped, and extraction effected. The cord was pulsating strongly. It was clamped by two artery forceps and divided between them. The child was skilfully resuscitated by Dr. Evans.

The uterus was now delivered through the incision. It did not contract satisfactorily and, as bleeding was going on, the placenta was detached and extracted, and kneading and friction of the uterus were kept up while the uterine sutures were being put in. But the womb did not contract until hot water had been dashed over it and normal salt solution had been injected under the breasts. The loss of blood was somewhat alarming, and I thought it might be necessary to amputate the uterus to prevent the woman from bleeding to death.

Interrupted silk sutures, a centimetre apart, were used to close the uterine wound. On the serous surface the needle was entered about a quarter of an inch from the edge of the incision and brought out just short of perforating the mucosa. Each suture was tied as soon as passed. After cleansing the abdominal cavity, the abdominal wall was closed by silk-worm gut sutures through all the layers.

Recovery though complete was tedious. About the ninth day the temperature rose a little and the right thigh and leg became painful in the course of the saphenous vein, but there was no swelling. A little later a small indurated, tender mass appeared inside the brim of the pelvis on the right side. At the examination of the woman before her discharge all morbid signs and symptoms had disappeared. The uterus had undergone complete involution and was movable.

The child was suckled throughout and throve perfectly.

In reflecting on the events of the operation some thoughts are uppermost. The fact that the application of hot water was promptly followed by contraction of the uterus, seems to favour the idea that it might have contracted sooner if it had been kept inside the abdominal cavity while the incision was being sutured. The anterior implantation of the placenta doubtless conduced in a measure to the free bleeding. The incision of the uterus here must have interfered with as complete contraction as elsewhere. The advocates of Fritsch's fundal incision would doubtless find in this case a favourable argument. I have no experience of it, but in the next case of similar position of the placenta I shall be disposed to adopt it.

In my experience of Cæsarean section this is the first case indicating,

or rather I should say demanding, conservative methods. I am inclined to think it is the first successful conservative Cæsarean section in this city, if not in the Dominion. If I am correct, the fact speaks volumes for the rarity of those conditions of impaired nutrition which bring about contracted pelvis. This woman had lost all her previous children and was naturally anxious for offspring. The fact that she is left in a condition for subsequent pregnancies is naturally a matter for satisfaction to the operator if not to the patient. In watching the case one could not help seeing that the sum total of suffering was much less than in normal labour in a normal condition of the birth-canal.

[The discussion on this case is reported at page 949.]

A CASE OF PORRO-CÆSAREAN SECTION IN WHICH BOTH MOTHER AND CHILD WERE SAVED.*

BY

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The patient upon whom the Porro-Cæsarian section was performed is aged 32 years. She was born in England but has lived in Canada and the United States since she was 19 years old. She has been married for fifteen years and during that time has given birth to three full-term children. The first labour was instrumental, the child being large, well-developed and healthy. The second child was delivered without assistance but was born dead, the cause of its death being unascertainable. The third child was delivered by Porro-Cæsarean section on September 24th, 1900.

Menstruation began when she was fourteen years old and appeared every 28 days, each period lasting three or four days for the first five years, but for eight days more recently. The flow has always been profuse but there have been no floodings. Her last period occurred in December, 1899, and was the same as usual. The patient usually had pelvic pain for half a day, the pain beginning just before the flow would appear. For the last twelve years the patient has suffered from a profuse leucorrhœa.

Present Illness.—On December 20, 1899, the patient had her last menstrual period. She was quite well until early in May, when she was violently shaken while standing up in a street car. She was suddenly seized with severe pain in the right iliac region, but was able to continue her journey in the car and walk about half a mile to her home. She continued her work as a weaver during the following week, at the end of which time, however, the pain (which had been continuous since its first onset) became so severe that she was confined to her bed, where she remained for two weeks. While in bed a lump the size of a hen's egg appeared in the right groin but gradually disappeared in about three weeks from its first being noticed. From this time up to two months ago the only pain felt by the patient was the one in the right side, but at this time she was suddenly seized with pains, which started in the back from whence they radiated down into the pelvis. These resembled

* Read before the Montreal Medico-Chirurgical Society, October 19, 1900.

labour pains and were intermittent in character. These pains continued for about one week but there was no discharge of blood.

From the cessation of these pains until September 22nd, the patient felt fairly comfortable but on the morning of the above date she was seized with pains, similar to those which she had felt before, and which she considered to be labour pains. The doctor, who was now called, diagnosed some abnormal condition to be present and sent her to the Montreal General Hospital where she was admitted to Ward G, but her pains had now ceased.

On examination of the abdomen the usual signs of a uterine pregnancy were made out, except that a fluid wave impact across the abdomen could be obtained with exceptional ease. The child was lying transversely with the head to the left. The fœtal movements were very vigorous. The heart beats were 130 to the minute.

Vaginal examination disclosed a laceration of the perineum with some prolapse of the vaginal walls. The cervix was greatly elongated and very soft (as in pregnancy at term) and was the seat of a bilateral laceration. The external os was quite patulous, but on trying to pass one's finger high up, the cervical canal was found to be blocked by a hard mass which encroached on it from the left side. In the left fornix a hard mass the size of an orange could be felt. It was apparently firmly fixed in the pelvis.

The patient was then sent over to the Montreal Maternity Hospital where Dr. J. C. Cameron kindly saw her and confirmed my diagnosis of an intra-uterine pregnancy, near full-term, complicated by a pelvic tumour.

As the pelvic canal was completely closed by the tumour, which could not be pushed up out of the road, it was decided to remove the fœtus through the abdomen and the patient returned to the General Hospital for that purpose.

After the usual preparation of the abdomen, Drs. William Gardner and J. A. Springle assisting, an incision five inches long was made in the middle line, beginning about two inches below the umbilicus and was continuing around the left side of this structure. Upon entering the peritoneal cavity the uterus was encountered at once. The abdominal walls were kept pressed close against the uterus and two hot aseptic towels were placed between the uterus and the intestines so as to prevent soiling the cavity. As the exact site of the placenta could not be ascertained, an incision 4½ inches long was made in the middle line, the lower end terminating just above the contraction ring. On dividing the uterine mucosa the placenta was found to lie immediately beneath the incision. It was therefore separated towards the left until the

membranes were exposed. These were torn through and the waters allowed to escape. The feet of the child were then grasped and the fœtus so delivered through the incision, after which the cord was clamped in two places and divided. The placenta and membranes were now quickly stripped off and removed, the uterus being packed with hot towels which caused it to contract nicely. This, aided by pressure on the broad ligaments, entirely controlled the hæmorrhage. On account of the presence of a submucous fibroid the size of a small hen's egg, together with larger ones, it was decided to remove the uterus, which was done by ligating and dividing off the broad ligaments, dissecting the bladder off from the anterior surface of the uterus, isolating, ligating, and dividing each uterine artery, beginning with the left, and then dividing across the cervix. After covering the stump with peritoneum the abdomen was flushed out with normal saline solution, some of which was left in the cavity, and the wound was closed.

As soon as the umbilical cord was divided the child was handed to Dr. J. C. Cameron, who kindly took charge of it from then on. It was found to be very pale and to require resuscitation, but artificial respiration was successful in speedily producing vigorous signs of life.

I am glad to be able to report that both mother and child have made excellent recoveries, although that of the mother was slightly retarded by a sharp attack of bronchitis. She sat up in a chair yesterday (October 18th), and will leave hospital in a very few days.

This case was an especially suitable one for this method of delivery. Thanks to the care and forethought of the patient's physician, she was in the hands of the operator before she had been exhausted by the pains of labour, or before the passages had been rendered liable to infection by numerous examinations or ineffectual attempts at delivery *per vias naturales*, and so we were enabled to select our own time for operating. It was thought by the physician who first saw her that the condition might possibly be one of extra-uterine gestation at term, being misled, I presume, by the history of sudden onset of pain at the end of the fourth month of pregnancy, followed by the appearance of a small tumour in the side on which the pain was felt; by the existence of a hard rounded mass continuous with the cervix, and which felt somewhat like the fundus uteri lying in the left fornix; and by the thinness of the sac containing the fœtus, as evidenced by the ease with which the fluid wave could be felt and the fœtal parts made out. The evident rhythmic contractions and relaxations of the fœtal sac, however, were proof positive of the intra-uterine nature of the case as they never occur in the case of an ectopic gestation.

It may be asked why time was taken up during the operation in separ-

ating and removing the placenta and membranes when the uterus was subsequently removed. The reasons are twofold. *First*, the placenta was partly separated while exposing the membranes and bleeding was continuing from the partially divided vessels, which complete separation would stop; and *secondly*, it was thought possible at first to enucleate the tumour and leave the uterus in place. This procedure was afterwards deemed inadvisable on account of the extra time which would be occupied.

According to Howard Kelly the indications for a Porro-Cæsarean section are :—

(1) Expected sepsis.

(2) Cervical cancer. That this is not always an absolute indication for a Cæsarean section was well illustrated by a case which I saw some years ago in consultation with Dr. D. F. Gurd. The patient was pregnant at term, and the cervical walls were so infiltrated with cancer that the pelvic canal was apparently almost occluded by the growth. Cæsarean section was advised, but was refused. Dr. Gurd subsequently delivered the patient after an apparently normal labour.

(3) Myomata blocking the pelvis and non-removable by myomectomy.

(4) Extensive atresia of the vagina.

(5) Bilateral ovarian tumour with no healthy tissue discoverable.

(6) Uncontrollable hæmorrhage from the placental site, but the number of cases where this is necessary may be reduced by avoiding the use of the temporary elastic ligature around the cervix or by ligating one or both uterine arteries.

The statistics of the results of Porro's operation are misleading, as the majority of writers include operations which were performed before the general use of antiseptics, as well as those which have been done under the most approved aseptic technique, which manifestly tends to give the operation a reputation for danger which at the present day it does not deserve.

In "Playfair's System of Medicine," published in 1896, Thornton says that "some 250 cases of this operation have now been recorded with a maternal mortality of about 50 per cent."

R. P. Harris, of Philadelphia, tabulated, up to 1885, a series of 164 cases (three of the patients were moribund at the time of operation) with a maternal mortality of 58 per cent., but from 1886 to 1889 (inclusive), 158 similar operations gave a maternal mortality of only 29 per cent., this marked improvement being due principally to the improved technique of abdominal surgery.

In 1895, Grandin and Jarmin recorded a maternal mortality for Porro's operation of 25 per cent., and of the Sänger-Cæsarean of 10 per

cent. From the above figures it is evident that Porro's has come to be a sufficiently safe operation to compete with the much more repulsive proceeding of embryulcia, especially where the child is living.

The following is the report upon the uterus and tumour kindly furnished by Dr. H. R. D. Gray, Resident Pathologist to the Montreal General Hospital.

The uterus is large, measuring from the fundus to the cervix 14.5 c.m., from side to side 12 c.m., and from fundus to the lowest portion of the tumour 24 c.m. The placental site is easily defined. The walls are thick, firmly contracted, and literally filled with myomatous tumours of different sizes. The largest of these is situated behind and slightly to the left of the cervix, which is represented in the specimen by an irregularly shaped opening admitting the index finger. This large mass has the following dimensions:—From above downwards towards the vagina it measures 9 c.m., its lateral diameter equals 3·8 c.m., and the callipers, when placed in the antero-posterior diameter, register 3·5 c.m. Numerous other distinct tumours are made out, they are all intramurally situated and vary in size from that of a large walnut to that of a pea.

[The discussion on this case is reported at page 949.]

CHOLECYSTITIS COMPLICATING TYPHOID FEVER.*

BY

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As compared with a few years ago, judging by available reports, this complication of typhoid fever is now being recognized with much greater frequency, and the attention of this society, so far as I have been able to ascertain, has been engaged with this topic on but one occasion, when, about three years ago, Drs. Martin and Keenan reported a fatal case of cholelithiasis complicating typhoid fever. Since that time opportunity has been afforded us in the wards of the Royal Victoria Hospital of observing at least six cases, four of which are briefly sketched in these notes from the cases of typhoid fever treated this year.

The literature upon this subject has been so recently and so ably reviewed by different writers, who have also made very valuable contributions to our knowledge both in its clinical and bacteriological aspects, that but little remains to be said in this connection more than to mention the names of those who have thus rendered such service to the profession. In 1897, before the American Association of Physicians two important papers were read bearing upon this complication of typhoid, the one entitled, "Hepatic Complications in Typhoid Fever," by Dr. Osler, the other by Dr. Mason on "Gall Bladder Infection in Typhoid Fever." Since then in 1898, Dr. J. M. DaCosta and Dr. C. N. B. Carnac have separately reported cases and reviewed the subject in a very thorough manner. In addition to these articles appearing in 1898, Dr. Keen's book "On the Surgical Complications of Typhoid Fever," was quickly followed in 1899, by Dr. H. A. Hare's book on the Medical Complications of this disease. In these one may find all that seems, at present at least, to be of much importance on this subject.

From a perusal of these papers and books one wonders that the complication is so rare and cannot refrain from expressing some surprise, in view of our recent findings, when Dr. Mason states that the records of the Boston City Hospital, so far as he is aware, contains but three other cases of this complication in typhoid fever besides the one he reported at the time. Undoubtedly, as Hagen Müller says, it will be more frequently observed when attention is awakened to the subject.

It is now generally recognized, thanks to the work of Chiari, Dupré,

* Read before the Montreal Medico-Chirurgical Society, November 2, 1900.

Hagenmüller, Gilbert and Girode and others that the gall bladder of typhoid patients is very commonly infected by typhoid bacilli, and Councilman, in discussing Mason's paper said, in speaking of this form of infection, "I have come to regard the gall bladder as one of the surest places to obtain a pure culture of this organism."

Two of the cases which are here sketched as briefly as is considered consistent with clearness, were under my own care in the Royal Victoria Hospital. For cases iii and iv, I am indebted to Dr. Martin who has very kindly given me permission to thus make use of them.

Case I.—H., a student, aged 28 years, was admitted on October 11th, 1899, on the seventh day of the disease. From his complaints and in his description of the onset of the illness, and from his condition on admission, typhoid fever was suspected. During the following nine days rose spots appeared, the spleen became palpable and the Vidal reaction became positive. The patient was free from abdominal pain and tenderness. The temperature during this period varied from 99° to 102 1-5° F., at no time becoming normal. Late in the afternoon of the seventeenth day of the disease the patient complained of abdominal pain which he referred to the middle line about two inches below the ensiform cartilage and later, when it had increased in severity, to the right side of the abdomen, just beneath the ribs in the nipple line where slight tenderness was present. At 9 p.m. nausea and vomiting set in quickly followed by a severe rigor fifteen minutes in duration, after which the temperature rose to 104° and by 10.15 p.m. to 105°. Profuse sweating followed. Just below the costal margin and extending downwards on the right side there was tenderness and rigidity but no mass was palpable. A second rigor occurred during the night and then the patient was comparatively comfortable, the temperature falling to 99° in the next ten hours. The pulse rate during this period from the onset of severe abdominal pain varied but slightly from 70 to 104. On the following day a distinct icteroid tint was detected in the conjunctivæ and skin, the urine contained bile and on the 23rd day the stools were clay coloured. During the next few days the tenderness disappeared from the abdomen, the jaundice became less marked, the pulse ranged from 76 to 90 and the temperature rarely went beyond 103°. On the 27th day of the disease —ten days after the onset of the abdominal pain,—a profuse perspiration occurred; on the 29th day chilly sensations were complained of, and pain recurred in the right upper quadrant of the abdomen. Vomiting once again set in and tenderness became again pronounced.

The examination of the blood showed slight leucocytosis 10,000 white corpuscles per c.cm. Marked resistance with great tenderness was found over the region of the gall bladder and by gentle palpatery

percussion one could outline an area continuous with the lower border of the liver dulness extending downwards from the ninth costal cartilage about two and a half inches towards the umbilicus.

The diagnosis of cholecystitis was made and operation was performed by Dr. Bell on the 35th day of the disease, eighteen days after the onset of the first manifestation of this complication. At the operation, the details of which it is not necessary here to relate, the following conditions were found. The surface of the liver adjacent to the gall bladder was covered with inflammatory lymph. The gall bladder was enlarged somewhat and adherent to the under surface of the liver. Its wall, at three different parts, was dark and gangrenous and at two small areas it seemed as if the slough involved the whole thickness of the wall. The contents of the gall bladder consisted of dark bile-stained purulent fluid and a calculus the size of an almond with two smaller irregular ones. After removal of these the progress of the case was favourable and thoroughly satisfactory. Cultures of fluid taken from the gall bladder showed pure growth of typhoid bacilli.

Case II.—G. G., female, aged 57, was admitted July 30th, 1900, on the seventh day of typhoid fever. The case at first was marked by no unusual event and the febrile state subsided on the 34th day of the disease. Then followed a period of ten days during which the temperature was practically normal, the highest point reached being 99·8°F., while the daily variation was less than two degrees. On the 45th day the temperature at its lowest point was 99°. This marked the beginning of a relapse which continued for seventeen days, the maximum temperature of 103° being reached after a gradual ascent of five days. On the 61st day of the disease the relapse ended and for the next ten days the temperature was subnormal. Suddenly on the morning of October 3rd, the 72nd day of the disease, the temperature ran up to 101 1-5° and pain with tenderness was experienced in the epigastrium. No tumour was palpable. On the following day a slight chill occurred in the morning, a subicteroid tint was observed over the surface and epigastric tenderness was elicited on palpation. There was no bile found in the urine at any time. The temperature fell to normal at the close of this day, October 21st, and but little was thought of the complaints of pain until three days afterwards, when the temperature rose from 97 3-5° to 99 3-5°, pain was again complained of and a mass was discovered in the right upper quadrant. It occupied a position a little above and to the right of the umbilicus. It was about two and one-half inches long by an inch and one-half wide, extremely tender, gave a dull note on percussion and was freely movable on inspiration. (This was best seen when under the anæsthetic as during consciousness the breathing was thoracic).

It could not be definitely traced to the liver as one found between the tumour dulness and that of the liver a small area of resonance. However, it was thought to be a distended gall bladder and after consultation with Dr. Bell the case was transferred to the surgical ward.

On opening the abdomen the gall bladder, which was adherent to the parietal peritoneum, was found distended, tense, considerably enlarged and of a dark purplish colour with here and there upon its peritoneal surface, especially towards the inner (left) side, several yellowish necrotic areas about the size of peas. The contents of the bladder consisted of blood clots, lymph, bile and six dark rough stones. The patient has made satisfactory progress since this operation. Cultures from the bladder contents demonstrated the presence of typhoid bacilli.

Case III.—Mrs. L. H., aged 38, was admitted on the sixth day of her illness. Early during her sojourn in the hospital albumin was detected in the urine with a few granular and hyaline casts. The albumin subsequently disappeared. She had passed through the fourth week of a typical attack of typhoid fever and her temperature curve was turning towards normal when on the 30th day of the disease she became nauseated and on the following morning she vomited three ounces of greenish fluid, and complained of pain and tenderness over the region of the gall bladder. The liver was palpable and dulness extended below the costal margin. The temperature was two to three degrees higher during the next four to five days and did not regain the range pursued previous to this attack until ten days had elapsed. Icterus of the skin and conjunctivæ, biluria and acholic stools together with the signs already given, clearly indicated that the gall bladder and gall ducts were affected. No operative interference was deemed necessary, recovery from this condition being gradual and satisfactory. From this the scene soon shifted to a picture of bronchitis and myositis involving the left triceps. Subsequently cutaneous abscesses developed. She made a good recovery from all these complications of typhoid fever, and after a normal temperature of about five weeks she was discharged on the ninety-third day from the beginning of her illness.

The case illustrates a severe general infection, affecting kidneys, gall bladder and ducts, bronchial mucous membrance, muscle, and skin.

Case IV.—W. L. J., male, aged 29 years, was admitted on the fourth day of an attack of typhoid fever which was of moderately severe type. The temperature became normal on the 25th day. The patient complained from time to time during his illness of abdominal pain which was sometimes cramp-like and associated with some degree of tympanites. Early on the 28th day of his illness and after four days of normal temperature, he experienced slight cramps in the abdomen. Later in the

day he had pain in the right upper quadrant near the epigastrium. Early in the morning of the 29th day he suffered with severe pain to the right of the epigastrium and his temperature rose from normal to 102 3-5° F., pursued an irregular course and became normal on the seventh day after the onset of the cramp-like epigastric pains. A tumour developed in the right upper quadrant of the abdomen becoming both visible and palpable. It was very sensitive on pressure. Although bile was found in the urine, the colour of the skin was but faintly icteric. Operative interference was contemplated but in the meantime the tumour gradually disappeared and the pain and sensitiveness abated. He made a good recovery.

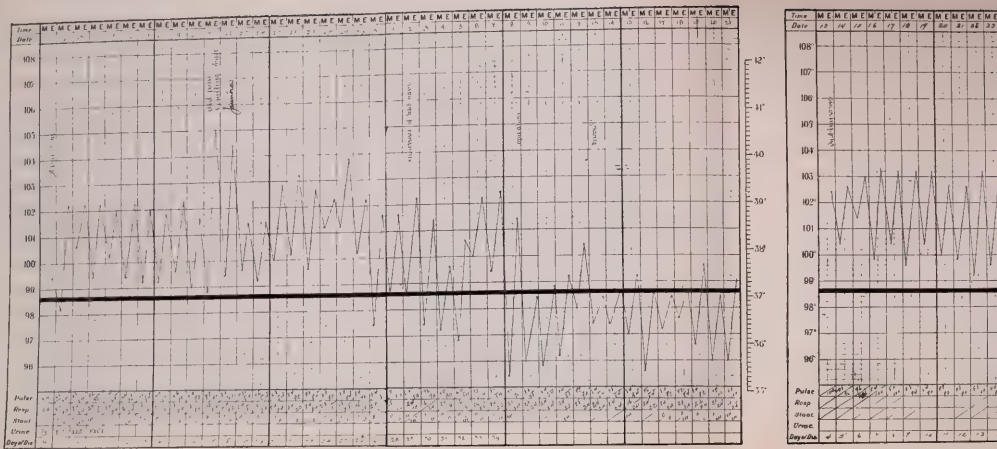
Turning to a brief analysis of our cases it may be said that the diagnosis of typhoid fever was undoubted, the Widal reaction having been obtained in each case, and the ordinary clinical features in themselves were sufficiently clear in their indications to determine this diagnosis. It has been seen that two were women and two were men. The ages of the men were 28 and 29 years and the women were 35 and 67 years old. The time of onset of this complication was rather variable:—In case i, on the 17th day, in case ii, on the 72nd day and ten days after a relapse. Cases iii and iv were on the 30th and 28th days respectively.

The onset was marked by nausea and vomiting in three cases, while a severe rigor with recurrence and high temperature with vomiting indicated the gravity of the condition in case i. Pain was a prominent feature of each of the cases. It was referred to the epigastrium and right upper quadrant beneath the ribs. Jaundice was pronounced in cases i and iii. It was slight in case ii, while case iv showed but a tint of yellow. Bile was in the urine of three patients and was absent in a third. The stools of two patients were clay coloured. Tumour was discovered definitely in all the cases. Let it be understood, however, that this question of gall bladder enlargement in two cases was settled only after most careful percussion and in one instance only after palpatory percussion was resorted to. In two cases the tumour was readily seen and felt.

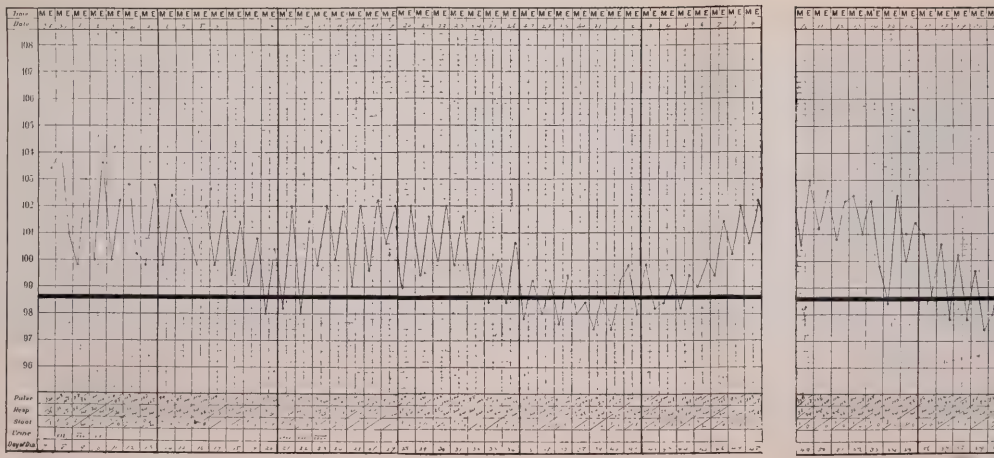
In reviewing these cases we see that a decided and sudden change in the temperature curve without much change in the pulse, more or less nausea and vomiting, fairly well localised abdominal pain and tenderness, icterus and the development of a tumour in the right hypochondrium, compose the clinical picture. When presenting such features who could fail to decide that the gall bladder or bile ducts were involved? The diagnosis is not always however so readily made and possibly as Keen points out, many biliary complications may be wholly latent.

In the cases herein narrated it must be confessed that very little

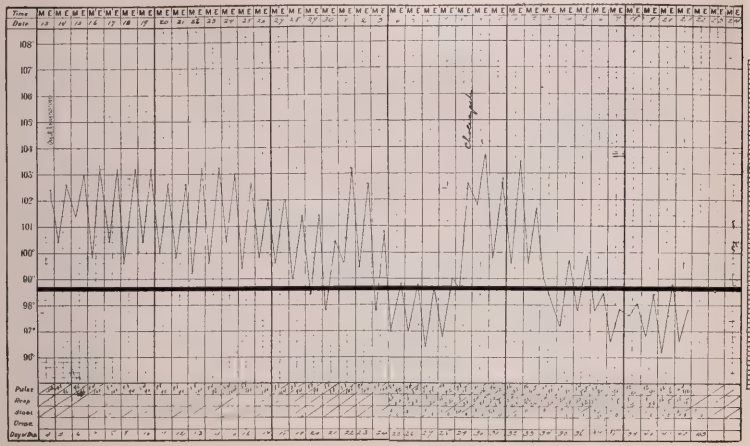
CASE I.



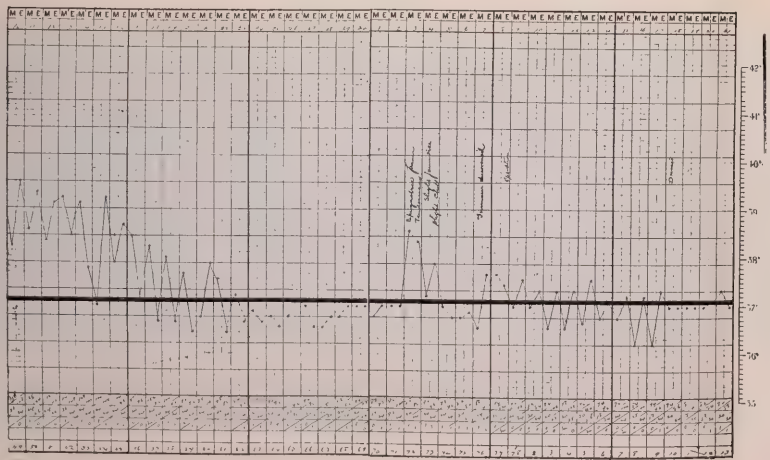
CASE II.



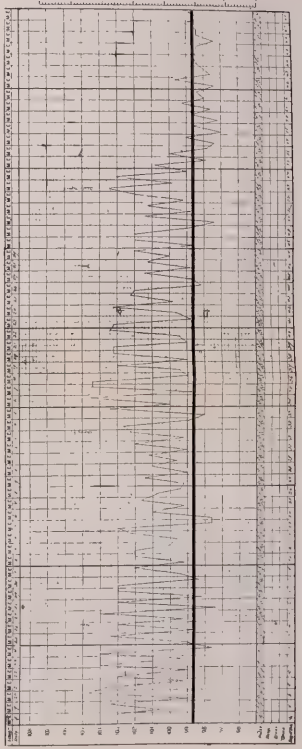
CASE IV.



CASE II.



CASE III.



difficulty arose in deciding on the presence of cholecystitis. In case 1, in the third week the onset was so sudden, the pain so severe, and prostration with sweating so marked, that at first intestinal perforation was suspected. In a few hours, however, this view was dismissed for that which at first was also discussed, viz., that of cholecystitis. If one finds in the past history of a patient in whom such a complication has arisen, evidence of gall stone colic, the case is rendered clear. This history, however, was absent in all our cases. The diagnosis of the presence of stone can scarcely be made, yet we more reasonably suspect stone in those cases of recurrence of the attack of pains, and where the other symptoms and signs persist. Operation was deemed necessary in two of our cases where the signs were recurrent and persistent. These proved to be cases of cholelithiasis; the other cases subsided without operation. Where stone is present in a gall bladder one would recognize a most favourable condition for a greater infection and expect, too, the persistence of symptoms.

This complication should always be regarded as a grave one. Mason in his list of collected cases shows a mortality of 25 per cent. Doubtless this figure is rather high for we are not in a position to judge, the number of cases dealt with being as yet too small.

[The discussion on this paper is reported at page 952.]

SOME CASES OF STOMACH SURGERY—GASTROTOMIES, TWO CASES; GASTRO-ENTEROSTOMIES, THREE CASES; PYLORECTOMY.*

BY

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Believing it would interest the members of this association, I have ventured to report very briefly the result of operative treatment in some cases of gastric and œsophageal disease coming under my notice during the present year; the more so as some of them had been under medical treatment for years without benefit, in fact, were gradually becoming worse.

While it is true that a cure was not effected in the malignant cases, nevertheless life has certainly been prolonged and distressing symptoms relieved which medicines failed to alleviate. In the non-malignant cases, where obstruction existed, though this was not in every case removed, still the symptoms complained of were promptly relieved by providing a new route for the pent up and fermenting food, and this I may say, as the result of operation with judicious dieting but no medication.

To overcome œsophageal constriction, in both cases, malignant, *Gastrotomy* was performed by the Kader-Senn method. A vertical incision 1½ inches long to the outer side of the left rectus and a finger's breadth from the costal margin was employed. A cone of the anterior stomach wall was stitched at its base to the peritoneum and transversalis fascia. The apex was punctured, a No. 9 (E) catheter was inserted and held in position by a purse-string suture. The cone was now inverted and secured about the catheter by two other purse-string sutures. The rest of the abdominal wall was closed and the patient fed before leaving the table with sterilized peptonized milk. The catheter was left in position for a week, then removed, and was only inserted when the patient was fed.

In both cases a perfect valve was obtained, and to facilitate feeding I had a short silver tube provided with a flange fixed at the proper point to enable the patient to be fed with ease at home.

Case I.—Mrs. A. H., 50 years old, complained of inability to swallow solid or semi-solid food and liquids only with difficulty. In addition

* Read before the Canadian Medical Association, Ottawa, September, 1900.

she suffered from frequent vomiting of mucus, a persistent hacking cough, and severe pain to the right of the mediastinum made worse on swallowing but lately more or less continuous, thirst, weakness and marked loss of weight, amounting to 30 pounds.

No bougie nor stomach tube could be passed beyond 13½ inches from the incisor teeth, and when withdrawn, though no violence had been employed, the tips were stained with blood.

Difficulty in swallowing began about the middle of January. On March 23, gastrotomy was performed and the patient was discharged on April 21, able to feed herself. The vomiting, pain, and cough were promptly and permanently relieved. The patient is still living and able to be out but, in spite of taking abundance of nourishment, is losing flesh and strength. Her chief complaint is thirst.

Case II.—F. S., aged 75 years, complained of cancer of the tongue which began in June, 1899. In July he refused operative treatment, but in the autumn had had paste applied. On examination, the back of the tongue and the right pillar of the fauces show extensive disease. He cannot open the mouth nor protrude the tongue; the pharynx cannot be seen. Marked difficulty in swallowing began about a month ago. He has been unable to swallow liquids for the past twenty-four hours.

Gastrotomy was performed on April 24th, and he was discharged on May 7th, having had two sharp attacks of hæmorrhage from the ulcerated tongue, with which exception convalescence was uneventful.

The patient rapidly improved in appearance and in strength and was able to go out, and occasionally took liquid and semi-solid food. The swelling of the tongue and fauces subsided somewhat owing to the rest given to the parts, but on July 5th he was seized with a severe diarrhœa of the choleraic type and died on the following day.

Gastro-enterostomy was performed on three cases:—In one for cicatricial obstruction with marked secondary dilation of the stomach. In another, in which suture for perforating ulcer of the duodenum with marked adhesions and narrowing of the first portion of the intestine was demanded, for the purpose of giving rest to this diseased tissue, and to prevent subsequent gastrectasis which would surely follow cicatrization. In the last case it was performed as a means of controlling hæmatemesis, where the source of bleeding was believed to lie beyond the pylorus.

Posterior gastro-enterostomy as devised by Von Hacker was the method employed in all. No difficulty was experienced in opening the lesser cavity of the peritoneum in any case. The stomach was stitched to the omental rent by a few serous sutures and the anastomosis was effected between a portion of the stomach wall, as near to the greater

curvature as possible, and the jejunum about fourteen inches from its junction with the duodenum. No secondary anastomosis was employed between the proximal and distal loops of jejunum, nevertheless there was no evidence of regurgitation of bile nor of pancreatic juices into the stomach. Vomiting did not occur as a special symptom. There has been no evidence of the acid juices of the stomach producing inflammation or ulceration of the jejunum as recorded by Braun.

In each case the operation has given relief to the symptom or symptoms for which it was employed.

As to the special method of securing anastomosis. The Murphy button was used in one case, but up to the present has not been passed. Sutures were employed in the last two cases.

The patients were given sterilized water during the first twenty-four hours and sterilized peptonized milk on the third day. The following is a very brief history of the cases with the result of treatment:—

Case III.—Mrs. M., aged 29 years, complained of dyspepsia, vomiting and constipation. Her dyspeptic symptoms date back 17 years, during which she had pain with vomiting coming on shortly after meals and, in addition, epigastric distress and eructations of gas. She had a respite from these symptoms between the ages of 22 and 26, but they returned again three years ago, and in a more aggravated form one and a half years ago. Since February, 1899, she has had, in addition, marked distension of the abdomen and the sensation of something tumbling about in the belly. Vomitus is large in quantity, shows food taken a day or two before, but never contains blood. Splashing. Tongue slightly coated. Inspection reveals a hollow epigastrium with a visible tumour occupying the hypogastric and umbilical regions, over which peristaltic waves pass from left to right. An indefinite but firm mass is felt above and to the right of the umbilicus.

She was referred to the surgical side on January 12th by Dr. Martin, who had diagnosed pyloric obstruction with gastrectasis and gastroptosis.

On January 15th, abdominal section revealed a dilated and flaccid stomach having a well-marked, scar-like seam running transversely across it for three or four inches. An irregular, firm, inelastic condition of the tissues comprising the pylorus, first part of the duodenum, and the pyloric end of the stomach was discovered. The whole was evidently the result of scar tissue formation. Posterior gastro-enterostomy was performed with the Murphy button, which did not pass. Convalescence was uneventful; patient discharged February 23rd. When admitted to the surgical ward she weighed 80½ pounds, when she left, five weeks later, she weighed 100¼ pounds. She was completely relieved of the dyspeptic symptoms, the vomiting, and the constipation. Peristaltic waves were elicited on stroking the abdomen.

Case IV.—J. K., aged 33, complains of vomiting, and pain in the stomach coming on about four hours after eating. Vomits sometimes shortly after eating, at other times several hours. The vomitus is slimy, occasionally bloody, and tarry blood has been passed in the stools, which are always constipated. His appetite is usually good; he has never used alcohol. The pain is located in the epigastrium, but radiates to the sides and since coming into the hospital it begins two to four hours after meals and usually lasts about half an hour. A test breakfast shows the presence of free hydrochloric acid. Total acidity equals 85 per cent.

While in the hospital, on June 9th, the patient developed severe pain in the epigastrium about noon, which continued throughout the afternoon. It was stabbing in character and accompanied by right sided abdominal rigidity and well-marked tenderness, some nausea, but no vomiting. Liver dulness was diminishing during the afternoon. The temperature was normal, pulse 104, respirations 28, pupils dilated and face pale.

Dr. Martin, who had previously diagnosed duodenal ulceration, recognized duodenal perforation and advised immediate operation.

On opening the abdomen a thin, puriform fluid with gas escaped from the incision. A perforation one inch from the pylorus surrounded by an extensive grayish necrosed-looking area, was readily seen. Numerous adhesions fixed the pylorus to the tissues behind, rendering repair of the opening difficult. An attempt was made to increase the size of the lumen of the bowel by inserting the sutures transversely. Gastro-enterostomy was performed; the abdomen opened above the pubes for drainage, and the whole cavity thoroughly washed out. The patient rallied, but unfortunately developed septic pneumonia, in spite of which, however, he gradually improved and was discharged on July 27th, forty days after operation, feeling well, relieved of his dyspeptic symptoms and able to take with relish the ordinary full diet of the hospital.

Case V.—Lillie McC., aged 26, was brought to the hospital on August 25th, suffering from hæmorrhage from the stomach. On August 4th she had fainted and shortly afterwards had vomited blood. After entering the hospital she vomited twice about 18 ounces of blood. There was a previous history, five years ago, of gastric ulcer. The total amount of blood lost cannot be estimated, but just previous to operation she presented the subjective as well as objective symptoms of severe hæmorrhage.

With Dr. Martin's consent, who saw the case in consultation, it was deemed unwise to risk the possibility of another hæmorrhage. Abdominal incision revealed a normal looking stomach, no scar nor dimple nor thickened spot could be detected; pylorus firm, and rather small. An

incision, vertical, into the stomach near the pylorus enabled us to see the interior covered with a bloody mucus, but no bleeding point could be detected. The lesser bag of the peritoneum was opened and the posterior wall and the several parts were pushed through the incision and sponged, but neither erosion nor ulcer could be detected. By reflected light the cardia and pylorus were examined but with a negative result. On attempting to pass the little finger through the pylorus it was felt to be grasped as if by an irritated sphincter, and it occurred to me that the erosion might lie beyond. Palpation of the duodenum failed to reveal any lesion and I determined to do a gastro-enterostomy, believing that the hæmorrhage had possibly come from the duodenum. While sponging the mucous membrane, a dilated vein gave way and was ligated with silk.

The patient has made uninterrupted progress towards recovery. The wound healed by first intention and the patient is now eating and enjoying food, which she says she would not have dared to have taken for many years. Blood examination shows steady increase in hæmoglobin and red cells.

Pylorectomy was performed once for pyloric obstruction with dilated stomach. After ligating the gastro-hepatic and gastro-colic omenta between double silk ligatures, and thus readily freeing the pylorus which was not adherent, elastic ligatures were applied to the part of the viscus to be resected. Two assistants secured the ends of the stomach and the duodenum respectively. Previous to operation the stomach had been thoroughly washed out with saline solution and was quite empty.

After closing the excess of the stomach wall by through and through as well as Lembert sutures, end to end anastomosis was secured by suturing, and the abdomen closed. The following is the clinical history.

Case VI.—Mrs. B., aged 27, entered hospital on February 25th, complaining of a sense of oppression in the epigastrium, pain in the same situation after meals, eructations of foul-smelling gases, and loss of weight. She had lost twenty pounds during the past four months.

Her bowels are regular and not constipated. The patient first complained of these symptoms two years ago.

Inspection shows the abdomen to be distinctly elevated about the umbilicus, and from time to time peristaltic waves pass from left to right. At the pyloric region a firm movable mass about the size of a small egg, can be felt. Test breakfast shows the presence of free hydrochloric acid. Total acidity, 30 per cent. No lactic nor butyric acid present.

Up to March 16th the patient had been treated by Dr. Martin, lavage having relieved many of the symptoms, and the patient gained two

pounds. The mass, however, had become more painful and she was transferred to the surgical department for operation, which was carried out as already described. The patient was discharged May 14th, having gained eight pounds in weight, and was able to enjoy her meals without pain or distress.

In the light of recent literature it might have been well to have established a second communication between the jejunum and the stomach. However, as up to the present I believe the patient has been enjoying good health, it is possible no contraction has taken place at the site of anastomosis. The pathologist reported the tumour-like mass to be a typical example of hypertrophic stenosis of the pylorus. As already said, the cases are reported solely to demonstrate the satisfactory result of operative treatment in selected gastric conditions not benefited by medical treatment.

A CASE OF CARCINOMA OF THE PHARYNX WITH MARKED INVOLVEMENT OF THE CERVICAL GLANDS IN A BOY FOURTEEN YEARS OF AGE.*

BY

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Carcinoma of the pharynx is, so far as surgical literature shows, a rare disease ; and the age of this patient makes this case even more remarkable, so that for these reasons it has been deemed worth putting on record.

The patient came to my ward in the Montreal General Hospital on September 13, 1900, for operation on enlarged glands in the neck, supposed to be tuberculous in origin. For the following history I am indebted to Dr. J. J. Ross (Montreal), who referred the case to me, and also to my house-surgeon, Dr. Murray.

E. M. McL., aged 14, came to hospital complaining of swelling on the right side of the neck causing the head to be held to the opposite side. The trouble began as a "stiff neck" about a year ago and shortly afterwards a lump appeared on the right side of the neck, near the angle of the jaw, which has gradually increased until at the time of admission it was as large as a hen's egg.

The patient had suffered previously from inflamed tonsils and had some nasal catarrh and difficulty in nasal breathing. He now breathes almost entirely through the mouth and when asleep snores very loudly. He has had scarlet fever, mumps, measles, and tonsilitis; but none of these, so far as known, left any permanent glandular enlargement.

The boy is thin, poorly nourished, and is rapidly losing flesh. There is a marked enlargement of the lymphatic glands around the right sterno-mastoid muscle and also enlargement, not so marked, of the corresponding glands on the left side of the neck. These enlarged glands are very hard and nodular ; they are firmly fixed to adjacent tissues and show no tendency to break down ; they are not painful. There are no other enlarged glands. The boy's speech is distinctly nasal, suggesting some obstruction of the posterior nares, as does also the snoring breathing. There is no elevation of temperature. The urine shows albumin and casts.

Family History.—The father is still living but not strong, being sub-

* Read before the Montreal Medico-Chirurgical Society, October 19, 1900.

ject to bronchitis. The mother died eight years ago of cancer of the liver and stomach. Patient is an only child.

I asked the Laryngologist of the hospital, Dr. H. D. Hamilton, to examine the nasopharynx in order, if possible, to determine the condition there present, and he reported that there was some postnasal growth with relaxation of the palate, but, owing to the fixation of the jaw by the enlarged cervical glands, a satisfactory examination could not be made.

I feared malignancy and thought there must be some primary focus about the nasopharynx to account for this marked enlargement of the cervical lymphatic glands. I could not think that the disease, if malignant, was primary in the glands themselves, especially when both sides were involved. To further the diagnosis and also to facilitate examination of the pharynx, on September 22nd, I anaesthetised the patient and excised the large mass of indurated gland tissue on the right side of the neck. It was very hard, but shelled out readily, and it was then seen that the condition was undoubtedly malignant, as all the structures were involved and infiltrated by the neoplasm, which cut like cartilage. There were a few small cysts in the mass but no hæmorrhagic spots. The linear skin incision was closed and healed rapidly.

The pathological examination of the excised glands, which was carefully made by Dr. D. P. Anderson, Assistant Pathologist to the hospital, showed that the neoplasm was "carcinoma of the scirrhus type." Now, carcinoma generally, if not always, begins in epithelial tissue, and one must needs,therefore, find the origin of this. As the infected glands receive the lymphatics from the nasopharynx, I naturally suspected that region and therefore I asked Dr. Hamilton again to examine the pharynx and if possible to remove a small piece of the growth there for microscopic section. This was done and the growth was now seen to involve most of the vault of the pharynx and showed no tendency to pedunculate. It bled freely on being excised. The pathologist reported on this section from the pharynx :—" sections here show the same typical carcinomatous growth as that seen in the cervical glands." So that here in a boy of fourteen, we have a case of carcinoma of the pharynx with marked secondary involvement of the cervical glands which drain the area affected.

The prognosis is hopeless; and the lad is rapidly losing flesh and strength since leaving hospital.

As regards the etiology of the trouble, I cannot do much more than put down the questions that occurred to me in thinking about it, as the whole problem of the causation of cancer has still to be solved. How much has heredity to do with it ? The mother showed symptoms of cancer when the child was four years old and died from it two years

later. How long has the cancer existed unnoticed in the pharynx? Was it the cause of, or was it possibly aggravated by, the "catarrh" noticed by his friends? And, finally, in what tissue did it begin? Cancer of the faucial tonsils is well recognised. Did this possibly begin in the pharyngeal tonsils while they were undergoing atrophic changes? One would expect to find in this region either a sarcoma (of the adenoid type probably) or an epithelioma, but carcinoma, as I say, is rare and more especially so when the age of the patient is taken into account. But given a carcinoma, it does explain the marked glandular involvement (which one would not get in sarcoma), together with the absence of an ulcerative condition in the primary focus (which one would get in a year's time in epithelioma).

[The discussion on this case is reported at page 950.]

NOTE ON A CASE OF ACCESSORY PANCREAS.

BY

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Cases of accessory pancreas as well as anomalies in the form and position of the gland are, according to the chief authorities, not very uncommon, though the literature on the subject is very meagre. The case here described is, however, the first which has come under our notice and we have thought it worthy of a few remarks, particularly as the condition has a pathological significance which has not been brought into much prominence. That cases are not often recorded is probably due to the fact that the pancreas and its vicinity are not always examined with the care that they ought to be.

This condition of accessory pancreas was found at a postmortem at the Royal Victoria Hospital, performed upon a young boy suffering from tuberculous caries of the lumbar vertebræ. The details of the case, however, have no special interest in the present connection, as the pancreatic condition was merely a side issue found unexpectedly at the autopsy.

The stomach was of fair size, containing a small amount of yellowish fluid; the pylorus admitted one finger; the mucosa was normal; there was no abnormality in shape or position.

The duodenum was of normal size and in the normal position; its mucosa was normal.

Just at the point where the duodenum pierced the peritoneal covering to form the jejunum, was a small flat nodule. This was situated on the left lateral border of the gut on the same side as the pancreas. The nodule was roughly oval in shape, measuring 1·5 c.m. long by 1 c.m. across and elevated about 5 c.m. above the general level of the serosa. Its margin gradually sloped on all sides so that the nodule was of the shape of a flattened dome. The serous covering invested it closely and it had no connection in any way with the main pancreas, which was in its normal site and of normal appearance. Section through the nodule showed that it was made up of a series of small nodules which had all the appearance of pancreatic tissue. The orifice of the exretory dust could not be found, although a subsequent examination showed that the duct must have existed.

Microscopical Examination.—A section was made directly through the middle of the nodule well into the intestinal tissue at each end. Owing to the difficulty of cutting it, it was not possible to preserve the

intestinal mucosa intact throughout its length, but a considerable portion was present at each end of the section, so that it was easy to make out the relationship of the parts.

The tumour formed was a distinct nodular excresence in the wall of the duodenum, or rather at the very beginning of the jejunum, projecting mainly outwards, though to a lesser degree into the lumen of the bowel. The serosa was directly continuous over this.

The tumour proper was found to consist of multiple lobules of varying size provided with ducts and having the acinous structure of the pancreatic gland. On the margin of this next the lumen, the mucous membrane of the duodenum was found to be continuous over the surface, the muscularis mucosæ being also unbroken. The intestinal mucosa showed some reduplication with the normal villi. There were no signs of any inflammation or other abnormality except the slight soddenness and smeariness so often seen in the intestinal mucosa and due to post-mortem changes. The crypts were normal ; Brunner's glands were not seen, unless certain atrophied, tube-like collections of cells were the remains of such. The tumour was regarded as being situated at the very commencement of the jejunum below the muscularis mucosæ and between it and the serosa.

At the one end of the nodule there was a distinct tendency for its substance to be separated into two portions, one being situated in the submucosa, and the other among the muscular bands of the intestinal wall. This tendency for separation did not, however, persist for long and towards the centre both parts became indistinguishably fused. Just at the margin of the outermost, the muscular coat bifurcated to enclose it, the inner portion running for a little distance in a fibrous septum into the substance of the tumour mass and eventually being lost, the outer being continued as a few thin fibres outside the tumour altogether but very soon disappearing.

Continuing the survey of the outermost portion of the section, the serous coat was found to be continuous over the whole mass, being slightly thickened in places. It sent inwards rather large fibrous septa between the lobules, which in places had a distinctly atrophied appearance. The condition of fibrosis was, however, more relative than actual. In several of these septa large isolated masses of unstriped muscle could be found, presumably the relics of the original muscular coat. These were quite separate and dissociated from the normally constituted muscularis.

Coming to the tumour itself, it had the structure of a compound racemose gland which was divided into well marked lobules bounded by fibrous septa, in which ran ducts and vessels. The lobules were in turn made up of acini, composed of a basement membrane lined with some-

what pyramidal cells. The lobules nearest the lumen of the intestine were large and well developed, only showing a moderate amount of self-digestion. The lobules just beneath the serosa were, however, smaller, the fibrous septa much larger, and the acini in many cases small and reduced by fibrous bands to small collections of cells in some cases irregularly massed together and in others presenting the circular arrangement of the proper acini. In many instances the nuclei only could be made out. One of the lobules so affected was practically only a tree-like arrangement of relatively large ducts with a very few badly formed acini about it. The ducts were everywhere relatively large, lined by columnar cells, and in places varicose-looking. Most of them were free from secretion and presented a normal appearance, while in some others there were a few mononuclear cells but no evidence of catarrh or obstruction. Some of the ducts seen in cross section were surrounded by a ring-like sheath of fibrous tissue. There was no inflammation about the ducts. The interlobular septa were composed in the main of well formed fibrous tissue. With the high power, could be seen a few oat-shaped and bluntly spindle mononucleated cells, presumably young connective tissue cells, together with a few round, deeply-staining mononuclear cells resembling lymphoid tissue. A striking feature was, however, the presence of rather large masses of unstriped muscle, well-defined and apparently isolated. Sometimes these occupied the largest portion of a septum. Even in the deeper portions of a gland, numerous fibres of unstriped muscle were to be readily made out, showing especially well by the Van-Gieson method of staining. These formed small wavy bands following the general course of the septa. None of the cell masses of Langerhans were noted, perhaps on account of the direction in which the sections were cut.

From a study of the sections just described, the nodule present was clearly composed of pancreatic tissue and for the most part in a functioning condition. The presence of well-formed ducts and acini without any evidence of catarrh or surrounding inflammation or signs of obstruction, indicates that the gland was secreting and possessed a fairly free discharge. Examination of the intestine, however, had failed to reveal the main duct opening, probably on account of its minuteness.

The fibrous bands observed in the outermost portion of the pancreatic nodule might possibly indicate a fibrous hyperplasia with consecutive atrophy of the secreting structure, but considering that the structure was really a development from a misplaced embryonic 'rest,' it is more natural to think that the deficiency in the parenchyma was due to a developmental hypoplasia. The pancreatic growth seems to have started in the submucosa of the jejunum, that portion being the most advanced in structure; but there were no doubt developmental centres in the mus-

cularis, for the muscularis is not merely displaced and atrophied from pressure, but muscle cells are found all through the central and outermost portion of the pancreatic nodule, indicating a growth which had insinuated itself or infiltrated between the various muscle bands.

When we consider the embryological development of the alimentary tract and its accessories, the explanation of the amomaly is not far to seek. At one period in the history of the human embryo the tract has the form of a simple straight tube, recalling the condition present in certain adult fishes and amphibians. As development goes on, the body cavity increases in size much faster than the intestinal canal, so that the connective tissue uniting the dorsal and ventral aspects of the gut to the body wall becomes elongated, to form ultimately two ligaments, each composed of two serous layers united by connective tissue. These are the dorsal and ventral mesenteries.

During the fourth week of fœtal life the various parts of the alimentary tract begin to be differentiated. The dorsal aspect of the tube towards the head begins to bulge backwards; this is the primitive stomach. The liver begins to develop in the form of a small diverticulum, which is produced on the ventral wall of the primitive tube just below a point corresponding to the future duodenum. Some time after, a similar pouch on the dorsal wall of the same portion indicates the future pancreas. The relative position of things is well shown in the accompanying figure taken from His.

The primitive pancreas grows into the dorsal mesentery just referred to, where it takes up the various connective tissue, vascular mechanism, and all other elements which go to form the interstitial substance. The stalk of the diverticulum becomes the eventual pancreatic duct. Although at first the duct enters the duodenum at the opposite side from the common bile duct, as development goes on the openings gradually approximate, until finally, in the normal adult, the two ducts discharge by a common opening.

A number of curious aberrations from the normal have been described. One of these is the formation of a *pancreas minus*, which is situated on the anterior wall of the duodenum. The duct may discharge in common with the duct of Wirsung or by a separate opening. Some pancreatic lobules can also be situated behind the superior mesenteric vessels. Somewhat more frequent is the occurrence of an accessory pancreas. This is situated in the upper intestinal tract and very rarely, as Nauwerck has pointed out (*Nebenpancreas, Beitr. v. Ziegler, XII, 1893*), in the lower bowel or the wall of the stomach. They vary in size from a lentil to a Windsor bean, and usually lie concealed in the wall of the bowel, but sometimes, as in the case recorded, project above the general surface of the serosa. They communicate with the cavity of the bowel

by a duct. When in the jejunum they have been found in the apex of a diverticulum.

The explanation of the case here recorded is simple enough. In the process of the growth of the primary pancreatic diverticulum, some of the primitive germ cells have been separated from the others and have undergone a certain amount of development. As the intestine becomes larger and longer in the course of the embryo's growth, these aberrant cells became further separated from the main mass. As it was provided with a separate duct, the accessory may, and probably did, originate in a sort of side diverticulum from the main one. When the primitive diverticulum originated higher up in the digestive tract, we get the accessory pancreatic nodule in the wall of the stomach or else we get a well formed pancreas, its only abnormality being that its duct instead of opening into the duodenum discharges into the stomach. Such cases have been recorded.

The practical importance, from a pathological point of view, is that these misplaced pancreatic "rests," like other embryonic inclusions, are capable of independent growth, and thus may subsequently develop into tumours, either adenomata or carcinomata. Certain cancers of the stomach are thus not improbably due to these fœtal implantations. The analogy is close with the suprarenal "rests" found in the kidney.

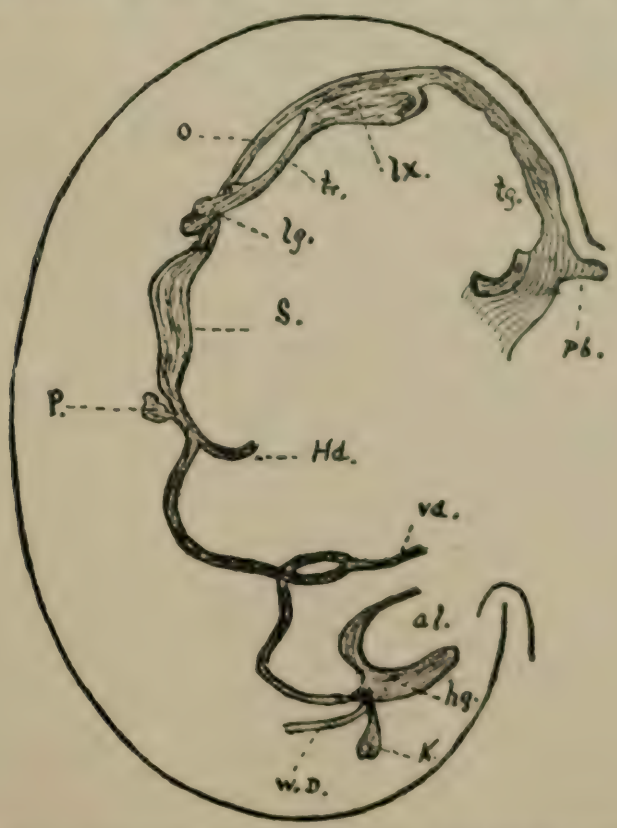

Fig. (After His.) Alimentary Canal of human embryo of twenty-eight days: Pb, pituitary fossa; tg, tongue; lx, primitive larynx; o, œsophagus; tr, trachea; lg, lung; S, stomach; P, pancreas; hd, hepatic duct; vd, vitelline duct; al, allantois; hg, hind-gut; Wd, Wolffian duct; k, kidney.

UNUSUAL CASES OF HERNIA.*

BY

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The following cases from their comparative rarity are, I think, worthy of record:

Case I.—Mrs. T., aged 38, was referred to the Surgical Department of the Royal Victoria Hospital on August 2, 1900, complaining of a small swelling in the left groin about the size of a hazel nut.

This had existed for ten years and increased in size on unusual exertion or on straining. It was not apparent to sight, but palpation showed it to be somewhat doughy, nodular, and deep seated, and it gave an impulse on coughing. It lay below Poupart's ligament and external to the pubic spine. The woman had never worn a truss nor had she ever complained of any urinary symptoms.

On August 3rd, the swelling was exposed by the ordinary incision, and the omentum found to be very intimately adherent to the sac, so much so, that great difficulty was experienced in separating it. Finally in disentangling the omentum and stripping back the sac it was discovered that we had opened two distinct cavities, one presenting the ordinary peritoneal sheen, the other lying behind this sac presented a pale, pink, smooth surface, which was readily demonstrated to be a diverticulum of the bladder by passing a catheter *per uretham.* This diverticulum at first seemed to consist only of mucous and submucous tissue, but, on continuing blunt dissection, muscular tissue was encountered. The rent was closed by three tiers of sutures, the first of fine catgut penetrated the submucous tissue only, the others of fine silk rolled in the muscular coats.

No peritoneum could be seen covering the bladder. The bladder was reduced, the omentum excised, the redundant sac ligated and excised, and the femoral ring ligated by a purse-string suture. A soft rubber catheter was worn continuously for a few days and then discarded, the patient urinating about every four or six hours.

On August 8th, the patient complained of frequent urination, vesical tenesmus, and passed some blood, which was not followed by relief. These symptoms continued more or less distressing until September 8th, when she passed a piece of sloughy tissue containing several sutures encrusted with phospates.

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* Read before the Montreal Medico-Chirurgical Society, Nov. 2, 1900.

From this time on the bladder symptoms gradually subsided, and the patient was discharged, on October 2nd, free from urinary symptoms.

Case II.—Mrs. S., aged 33, entered the Royal Victoria Hospital on October 6, 1900, complaining of a painful swelling in the right groin which made its appearance about one year and a half after an Alexander's operation, which had been performed about three years ago. In May, 1900, operation had been performed for its relief, elsewhere, and the patient given an abdominal belt to wear. The pain and swelling, however, persisted and gave her much distress.

On examination in the recumbent position, a semifluctuating swelling about the size of a small pigeon's egg is found in the right inguinal canal, which gives an impulse on coughing and which cannot be reduced, which evidently cannot be a hydrocele of the round ligament, nor a congenital sac. On standing, the swelling increases in size, becomes tympanitic, protrudes beyond the external ring, gives a distinct impulse on coughing, and is reduced with a gurgle.

On October 9th, the sac of the hernia was exposed through the previous scar, opened and the doubled up Fallopian tube, part of the round ligament, and what was evidently the hydatid of Morgagni were found anchored in the inguinal canal, and were readily exposed on splitting the external oblique tendon, nor could these structures be reduced until the round ligament was freed, its extremity ligatured, and allowed to fall in with the aforementioned structures. On ligaturing and excising the redundant sac the canal was closed by Bassini's method.

Case III.—J. W., female, aged 3, was admitted on October 29, 1900, to the Royal Victoria Hospital complaining of rupture, the mother giving the following notes:—

A year ago the child fell down stairs and complained of severe pain in the right side. On examining the seat of pain, the mother noticed a rupture which she reduced with some difficulty. It remained so and gave rise to no further symptoms until six weeks ago, when the child fell from a verandah and complained afterwards of pain in the same situation, the lump being again present, but giving more trouble in reducing it.

On examination nothing was noticed except an abnormally large right external inguinal ring. It was impossible to detect any impulse on crying owing to the child's restlessness.

On October 30th, operation was performed as follows:—The external opening was exposed by the usual incision, and the external oblique slit up as far as the internal ring, revealing a relaxed sac which did not extend beyond the external ring and which contained neither fluid nor bowel. On slitting this up, it proved to be a patent canal of Nuck on

the posterior wall of which lay an abnormally well developed round ligament which could not with the greatest care be separated from the sac so as to leave the latter intact. The ligament was sewed as far as the internal ring, thus slitting up the sac to that point, the excess of the sac after ligation being removed and the round ligament being sutured by two fine chromicised catgut sutures to the ligated stump of the sac. The ends of the catgut ligature ligating the sac were then carried by a needle through the transversalis fascia and transversalis and internal oblique muscles at a point about an inch external to the internal ring. The ends of the sutures fixing the round ligament to the neck of the sac were carried through the same structures about one-half inch higher up. The double ligatures were now tied together and lay beneath the external oblique tendon.

It was important to note in this case that when the round ligament was freed that the slightest traction brought the doubled up Fallopian tube into the inguinal canal, and on continuing traction, the ovary and fimbriated extremity also.

The inguinal canal was closed by the Bassini method.

From these two cases it would seem that in performing an Alexander's operation there is a possibility of developing an "operative hernia," not due to the giving way of scar tissue, but to the dragging in of the uterine adnexa into a rapidly acquired sac and which, if other conditions are favorable, will surely be followed by the descent of omentum and intestine. In the writer's opinion, this accident can only be avoided by taking measures to close the canal by one or other of the various methods (preferably Bassini's), employed for the radical cure of inguinal hernia, when performing Alexander's operation for shortening the round ligament.

[The discussion on these cases is reported at page 952.]

A CASE OF ICHTHYOSIS HYSTRIX.*

BY

JOHN A. HUTCHINSON, M.D.

The following case is of interest not merely from the rarity of these cases, but also from the well marked appearance of the ichthyosis. In the accompanying photograph the unusual darkness of the scales is partly due to the presence of dirt, as at the time the photograph was taken no treatment had been attempted and the child had been neglected in the matter of cleanliness. However, after thorough washing a very dark shade remains.

Family History.—The father died a month ago of phthisis aged about 30 years. He was a French-Canadian. The mother, who is about the same age, is of Scotch descent, strong and robust. There are two younger brothers, aged 4 and 2 years, both strong and healthy, but the younger of the two shows evidence of the same disease on the body and arms. The parents state that when they first noticed the condition the appearance of the scales on the older child was very similar to what it now is on the baby. No other cases are known to have existed in either the father's or mother's family.

Personal History.—E. F., aged 6 years, has always had good health, is well nourished and has suffered no inconvenience from the condition of the skin. The scaly condition of the skin was first noticed when he was about 20 months old, on the sides of the abdomen. The scales seemed to spread upwards and sideways over the trunk reaching the back at the age of 2½ years. When 3 years old the lesion was noticed on the arms and at 3½ on the legs also.

The child had whooping cough at 6 months, chicken pox at 4 years, and measles at 5 years.

Examination.—The line of demarcation between the lesion and the healthy skin is not a sharp one. The scales consist evidently of dried up masses of the horny epithelium of greater or less size. They can be scraped or rubbed off with the finger in small plaques, which break up very easily into a number of small clumps, the largest of these being the size of a millet seed. The general appearance of the involved parts is as if a single layer of loosely packed millet seeds, cemented together, had been glued upon the skin. Towards the edges, and in occasional patches elsewhere, the clumps are less densely agglomerated and the

* Read before the Montreal Medico-Chirurgical Society, November 2, 1900.

appearance is more discrete. It is said that in some cases on pulling off the clumps of hypertrophied epidermis, sebaceous plugs can be seen clinging to their under surfaces. There is nothing of this to be seen in the present case; the skin underneath is a dirty grey and is harsh and wrinkled, the natural lines and furrows being very pronounced.

The corium is evidently little if at all affected, as the elasticity of the skin is fairly well preserved. The distribution of the lesions is symmetrical and on the limbs is mainly on the extensor surfaces. The scalp shows a light grade of seborrhœa sicca. The hair is abundant, in good condition and of a brownish colour. The mother says the affected areas do not sweat. There is never any itching. Sensation is apparently normal to touch and pain. There is no indication of the disease following certain nerve tracts, and there is no appearance of it on the head, face, neck, hands, wrists, ankles or feet. The skin is also quite free along the spine.

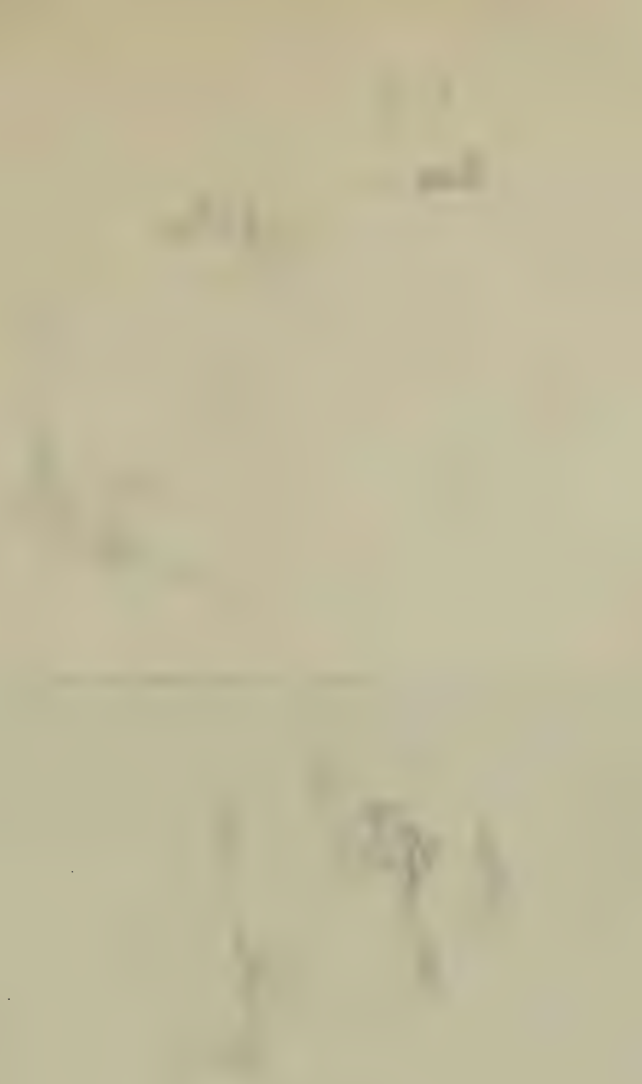
During the summer the skin would become clearer, though no treatment was adopted, and when the winter set in, the disorder would again increase, each year covering a larger surface than the previous one.

Only the scales scraped off the skin could be obtained for microscopical examination. These were submitted to Dr. Archibald for that purpose. His report is as follows:

Small clumps of the scales scraped off with the finger nail were treated with caustic potash and teased out. Others were put through alcohol and ether, examined fresh and also stained with gentian violet (5 per cent. solution in alcohol), and decolourized by the Gram-Weigert method. All these specimens showed nothing but the usual cells of the stratum corneum. In a few, nuclear remains could be made out. In none could any trace of the lower layers of the epidermis be discovered.

Treatment.—The parents could not be induced to put the child in a hospital where it could have proper systematic treatment, and as the mother would not carry on any line of treatment entailing inconvenience to the child, not much improvement was expected. The patient has been treated with thyroid extract for the last two months, and locally the skin has been softened by medicated soaps and frequent baths. This has had the effect of clearing off a good many of the scales and leaving portions of the skin comparatively free. I regard this only as a temporary benefit as the scales will likely form again when treatment has been given up and the cold weather returns.

[The discussion on this case is reported at page 951.]



REPORT OF A FATAL CASE OF HERNIA THROUGH THE FOSSA DUODENO-JEJUNALIS.*

BY

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AND

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Cases of retroperitoneal hernia are admittedly very rare. The particular variety through the fossa duodeno-jejunalis was first described by Treitz, and is sometimes known by his name. According to Treves about 70 cases are on record.

In many instances the condition has given rise to no special symptoms during life, and the condition has only been discovered accidentally at autopsy.

In a previous case shown by Dr. Wyatt Johnston before this society this form of hernia was found in a young child who had died from the results of a severe burn.

None of the symptoms are sufficiently distinctive to enable a diagnosis to be made before the abdomen is opened. Treves states that some cases suffer from dyspepsia, constipation, colic, occasional vomiting and flatulent distension. In others a cyst-like swelling, resonant or partly resonant on percussion, and lying to the left side of the umbilicus has been noted.

Obstruction, either of a chronic or acute character is seen in a small proportion of cases.

The following instance of the disease, proving rapidly fatal from obstruction, came under observation a short time ago.

In September, 1900, one of us was called to see a man æt. 40, at 1 a.m., suffering from severe abdominal pain.

On enquiry it was found that he had suffered from severe cramps in the abdomen on several occasions during the past few years, the last time being about two years previously, when he had a rather severe attack lasting about twelve hours. He had suffered from suppurating glands in the neck as a child and numerous scars on the neck testified to the truth of this statement.

The attack had come on about 6 p.m., an hour after eating a moderate meal. It gradually increased in severity until it became unbearable. He had taken a dose of salts and vomited three times afterwards, the vomited material being of a green color and not more than half a pint in all.

* Read before the Montreal Medico-Chirurgical Society, Oct. 19th, 1900.

The patient was a muscular and well developed man.

When seen he was sitting on the edge of the bed, leaning forward, with most intense pain in the abdomen. He was quite unable to lie down, and it was impossible to make a thorough examination. The abdomen, however, was extremely hard, rigid and board-like; it was not distended and there was only slight pain on pressure. The pain was constant with paroxysms of intense aggravation lasting two or three minutes at a time. The face was pale and covered by a profuse sweat. The temperature was 95 3-5°F, the pulse 60, regular, and although of rather smaller volume than normal, was of fair strength.

Morphine gr. $\frac{1}{4}$ was given, and in the course of the next two hours two other doses of $\frac{1}{4}$gr. each. It was only after the third dose that he began to experience any relief, and even then the abdomen was as hard and board-like as before the injections. He dozed during the night occasionally complaining of pain, and at 9 a.m. next morning died unexpectedly and without his friends having any special warning.

Autopsy.—On opening the abdomen a tumor resembling a greatly distended bladder was seen extending from the pubic arch to within a short distance of the ensiform cartilage, occupying chiefly the right side of the abdominal cavity. On further examination the tumor was found to consist of a sac of peritoneum, and contained the greater part of the small intestine (jejunum and ileum). The mouth of the sac, which admitted three fingers, was situated about the level of the third lumbar vertebra and looked downward and to the left. The upper part of the bowel was twisted just at the opening of the sac in such a manner as to cause obstruction, and for some distance above this kink the coils of small intestine were much distended and filled with impacted contents.

The unfortunate fatal termination of the case in fifteen hours is most unusual in intestinal obstruction. The cause of death must be attributed to shock, it being too early for toxæmia to have developed. Shock is well recognized to be much more severe in obstruction of the small than of the large intestine. The absence of severe vomiting is also worth notice, especially as it tended to obscure the diagnosis. It is probably to be accounted for by the fact that the obstruction was so high up in the bowel, and a little bile was the only material above the site of obstruction which was readily regurgitated.

In the cases hitherto reported death from obstruction only occurred in from 2 to 18 days, and there seems no sufficient reason why such profound depression should have set in so early.

The anatomical conditions described above show the condition to be a complete retroperitoneal hernia of the whole of the small intestine, with the exception of the duodenum. The obstruction as is usually the case was due to twisting of the bowel at the neck of the sac.

[The discussion on this case is reported at page 952.]

NOTES FROM PRACTICE IN THE ARGENTINE REPUBLIC.

BY

F. G. CORBIN, McGill '90, Mendoza, Argentine Republic.

Supra-Pubic Lithotomy with Suture of Bladder—No Drainage.

Very little, to my knowledge at least, has been written on the above subject. I may be mistaken, but beyond a foot-note in Jacobson, I never remember seeing, much less hearing, a word about it. Let me go back and tell you why I tried it.

For the last four or five years I have been operating a good deal, and found that I could open the dura mater and sew it up without drainage; the stomach, the intestines and the gall-bladder have all been treated the same way without apparently increasing the danger. Again, on three occasions I have torn the bladder, first in a hysterectomy I did it myself; then two years ago Dr. G., who was acting as my assistant in a case of pelvic abscess, in trying to pass a pair of forceps up between the bladder and the anterior surface of the uterus in order to get vaginal instead of abdominal drainage, tore the bladder, while in a third case, a hysterectomy, the bladder was badly torn the blame resting between myself and my assistant, Dr. D. In all these cases I sutured the bladder immediately and in the two hysterectomies left no drainage, and nothing untoward happened. This last case happened a week before I by chance was doing a suprapubic lithotomy on a child of six years. Dr. D. assisted me. I proposed suturing the bladder as I had done with perfect success the week previous, and the operation was completed in this way. Since then, nine months ago, I have done the same in all cases of stone in the bladder without pyuria, I have met with. Nothing in surgery could surpass the results; in every one of my cases the return to health and happiness has been without any bother and above all without loss of time. All surgeons who have practiced suprapubic, median or lateral lithotomy know how long some of their patients take to get their fistulæ healed up.

When drainage is used, be it glass, rubber, or gauze, you never by any possibility get the rapid brilliant successes to be attained by suturing the bladder; besides, I do not believe the danger to the patient is increased if done by men accustomed to abdominal work. Naturally, if before one begins, one cannot feel sure of sewing the bladder in a way to leave it watertight and without stitches on its inner surface, it is better to drain, because, although the urine in perfect health is aseptic,

on entering the bladder one cannot be sure it will be in that particular case and at that particular time, moreover, it might get septic after leaving the bladder, and would certainly in any case irritate the neighbouring tissues, should it leave its natural deposit. But, given an ordinary case of stone without pus in the urine (do not trouble about a bacteriological examination; if you cannot see the pus it is all right), and a competent surgeon, I claim that the bladder not only might be sutured but ought to be.

The patient will be up in a week and well in a fortnight. Should he then be a month, two months, or longer still, with a disgusting fistula on which to spend money in dressings and lose his time and patience, not to speak of the unpleasant odour and irritation of the skin which are accompaniments of all ordinary fistulæ? By suturing the bladder on removal of the stone all this might be done away with.

My own cases are not yet sufficiently numerous to allow me to speak so confidently, but I have great faith in this operation, which I suppose is more or less new; and my results have been so perfect and pleasing that, personally, I will continue practicing it and, until I find out some ulterior drawbacks, if there are any, will continue to recommend it.

As to the technique of the operation, it is simple, in the extreme, much more so than when drainage is resorted to. We have all read about that serous membrane known as the peritoneum. Don't think of it if you are intending to suture the bladder in a suprapubic lithotomy. In my former suprapubics, and now when I wish to drain, I always take great care not to open the peritoneum. Look for it, trace it down over the front of the bladder, and incise the organ below its reflexion. Sometimes a bother, to say the least, and nearly always leaving very little room after the bladder is empty, to work with comfort. Besides, the bladder has to be well dilated and most authorities advise a rectal bag, or something of that class, to aid in getting the much dreaded peritoneum a little more out of the way.

In my last three cases I have purposely opened the bladder through the peritoneum and, for the reason about to be explained, I think it is better to do this. After suturing the bladder itself, that same peritoneum comes in very, very handy for a new line of sutures, which leaves no doubt in your mind of the perfect tightness of the bladder. I use a continuous suture of fine silk, and fasten the peritoneum to the sutured wound of the bladder. We all know how quickly the peritoneum throws out its plastic material and seals up, or over, anything to which it may be attached.

Thus, not only is it surer but it does away with rectal bags, etc., while the operation is easier on account of more room, a great point certainly.

"More room!" How often in abdominal operations I have wished for that, so much so that in operations on the kidney I have been tempted over and over again to go at it by an abdominal instead of a lumbar incision.

Another point I would like to point out. Don't make too small a cut in the bladder. Make the incision long enough to get the stone out without bruising the edges. A clean cut heals much better and is more easily sewed, while a cut two inches long heals in exactly the same time as one an inch long. Some surgeons forget this, and you see them working away through a two-inch incision with difficulty instead of working with ease, comfort and speed through a four-inch one. Besides the margins of the small wound are more apt to be bruised than those of the large one.

After the operation, I leave in a soft catheter for four days, then draw off the urine every three hours for four days more. For the cystitis, which surely exists to a more or less extent, I use twice daily a gentle wash out with four per cent. boracic acid solution in sterilized tepid water. Be careful not to overstretch the bladder wall at this time.

Do not close the abdominal wound if you are not sure of your bladder suture. A bit of gauze drain for a day or two may save you trouble later and the patient his life. I have never tested my sutures by water pressure and think it better not to do so, as the pressure can certainly do no good and might do harm. Do your suturing well and sleep without worrying. I must acknowledge I was a little dubious over my first case and got up earlier than usual to go and see him.

Those who have followed me thus far will say, perhaps, that all cases suitable for suprapubic lithotomy with suture of the bladder and no drainage, are also suitable for lithotrity. I will not, how can I, either affirm or deny this? I have only one experience of crushing for stone in the bladder. Perhaps I did not do it well, probably I did not get all the fragments out; anyhow, the stone turned into stones, which I removed seven months later by median lithotomy. Since then, 1894, I have never even thought of my lithotrite. It may be good, it may be excellent, but I prefer the knife, without wishing to condemn a recognised surgical instrument of undoubted value in good hands.

As to the danger to the patient in one or other way of operating. To my mind the surgeon used to abdominal work will have found an ideal operation without danger whereas the surgeon accustomed to the lithotrite would make perhaps a mistake in changing. Practice makes perfect. I hope I am correct in my appreciation of the two methods. I would be very pleased to see more, or hear somebody more competent than myself, on the above subject.

"OBITER SCRIPTA." VII.

(Casual notes from the Medical Clinic, Royal Victoria Hospital.)

BY

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AND

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Notes on the Therapeutic Uses of Hot Air.

With the therapeutic nihilism which is now-a-days so common and withal so refreshing, in even great medical centres, new treatments are disregarded almost as rapidly as suggested. It may be true that the majority of new drugs are of greater benefit to the merchant than to the patient and so too of many appliances that are calculated to impose on the credulity of the physician and the experimentalist. Inquiry as to the extent to which hot air has been used, reveals the somewhat surprising fact that it too, as a method of treatment, is in danger of suffering a similar fate, not so much from its inefficiency, but largely for the reason that its results were not equal to the exaggerated expectations.

So far as we are aware, the subject has not been discussed at the Canada Medical Association, hence our desire to mention briefly some of the benefits of hot air as a therapeutic agent, while duly recognizing at the same time its limitations.

This method of treatment has been adopted now for some years, though never with such éclat as when, in 1894, there was introduced into England a new machine, by means of which air heated up to 300° or 400° F. could be directly applied to almost any part of the body with impunity.

Briefly, the apparatus consists of a copper cylinder sufficiently large to admit an extremity, the pelvis or the whole trunk. A special arrangement of valves allows for free circulation of air, while a thermometer, placed through the top, registers the temperature of the air within. The part to be treated, being well wrapped in flannel, is placed in the cylinder upon an asbestos cushion, and rubber sheeting (attached externally about the opening of the cylinder) is drawn and tied tightly about the limb.

The temperature of the bath, at first about 180° to 200° F., is gradually raised until within fifteen minutes it has reached 240° to 260° F., and then rapidly to 280° or 300° F. or more, till the termination of the individual treatment. The duration of the bath varies according to the condition of the patient and the stage in the treatment of the malady; as a rule the baths are administered on consecutive or alternate

days. During the bath the patient is encouraged to drink water freely, and at the end, wrapped up in a blanket, he is wheeled back to his bed, where he remains for two or three hours. Minor variations in the method occur in various institutions, the general principles, however, being the same.

Once introduced, the treatment was found to create temporary benefit in rendering stiffened joints of arthritis deformans more supple, and in enabling bed-ridden patients to walk more easily than they had done for months or even years. But the effect did not prove lasting, nor was the improvement progressive. Joints remained more supple up to a certain limited extent, but with the prolonged cessation of treatment, as a rule, the joints returned to their former condition. Such, at all events, was the treatment in arthritis deformans, and in many cases of aggravated chronic rheumatism, though where any pains existed or acute symptoms manifested themselves, the relief was rapid and pronounced. That, however, the method had a curative value, not even the most sanguine had reason for hoping, and it was from a false estimate of its value that the application of hot air received in many places its quietus. H. C. Wood, it is true, found many cases of arthritis deformans were rendered worse by the treatment. Yet in this and in other severe chronic affections isolated cases have been recorded where the benefit was pronounced. It is more, however, in painful effusions and in acute and subacute conditions, that the improvement is most interesting to note, being more rapid and complete than by the various other means adopted, most of which act with painful tardiness.

Recalling for example the early cases in Montreal, already reported by Dr. James Stewart, we see the effects on the course of subacute and more or less chronic cases of gonorrhœal arthritis especially. Cases of several months duration were not only relieved from the pain incident to those inflammatory conditions, but the mobility was increased and walking (when the knee was affected) was rendered more quickly possible than by any other means we have adopted. Where much pain was present, the relief was almost immediate upon the first treatment, and pains which recurred after twenty-four hours were again quickly dispelled by the second bath, and after finally quite disappeared.

In advanced cases, of course, a remaining stiffness was bound to exist; but even where no satisfaction was obtained, there were never any evil effects observed, and the contra-indications to the treatment are apparently so few as scarcely to be taken into account. Possibly, sufficient stress had not been laid on the fact that the treatment in such cases is purely symptomatic, and any action on the specific cause of the disease is of course out of the question. Not only does hot air not affect the growth of gonococci or tubercle bacilli in joints, but its effect

on the general metabolism is extremely slight. The nitrogen elimination is not appreciably altered, at all events certainly not increased, the action of hot air being evidently a purely local one.

Nor is it only in the treatment of painful joint affections that hot air has been found eminently useful. The pain due to periphereal neuritis and local neuralgias was relieved with astonishing rapidity while the affection itself seemed to terminate on an average more speedily than by any other method we have adopted. During the past four years some 34 cases of sciatica were treated at the Royal Victoria Hospital, five of these with the ordinary methods and without hot air being applied. Of these, three were unaffected by the applications used and showed no improvement. The remaining 29 were treated by hot air and were rapidly relieved. Fourteen were completely cured, leaving the hospital well, after an average duration of three weeks, though among them were cases which had lasted months, and in one case more than a year.

The other thirteen showed marked improvement though not a complete cure. The pain was relieved on discharge, though slight tenderness to pressure remained, or in some few instances, slight lameness. Such cases, however, had been much more protracted, the average duration of these thirteen being five months. The relief by hot air was particularly striking in one instance, that of a young Frenchman who had suffered for some months and on admission was given the usual treatment by blistering and other forms of counter irritation, and the leg finally fixed in a splint. All this seemed to have no avail in relieving pain or disability, and he was placed on hot air baths. Almost immediately he was relieved of pain, and within a few days was able to leave the hospital quite well.

There would seem to be no necessary relation between a protracted case and the rapidity of the cure, inasmuch as where there was in some instances a previously long duration, the cure was rapid, more so than in many others which had lasted a shorter time. As a rule, however, the more protracted the case the greater is the number of baths required.

In the two cases of sciatica remaining in our series, absolutely no result was obtained, and they were referred to the surgeons for stretching. Such treatment likewise proved ineffectual and they left the hospital unrelieved.

What particularly directs one to the hot air treatment in sciatica is the rapid relief of pain, a relief which persists and enables the patient, while taking the necessary rest in bed, to enjoy comfort and freedom from suffering. Neither blisters, fomentations nor any other form of local application have been, in our experience, attended with like satisfactory results.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

The Origin of Pleuritic Infection.

JUL. A. GROBER. "Die Infectionswege der Pleurä." *Deut. Arch. Klin. Med. Bd., 68, 296.*

Modern views on the causation of pleurisy refer the disease principally if not exclusively to a bacterial origin. In some instances bacteria are readily demonstrated by the ordinary methods of staining and cultures, the commoner forms being pneumococci, streptococci or staphylococci. In another class of cases, however, especially serous pleurisy, no bacteria can be recognized either in cultures or stained preparations. The tubercular nature of this large class of cases has been emphasized particularly by the French school, the proof being that inoculation of guinea-pigs with the serous exudate commonly induces tuberculosis. This test is often positive when there is no other evidence to indicate tuberculosis. Eichorst found that 15 out of 23 animals developed tuberculosis when inoculated with the serous exudate of cases of apparently primary pleurisy, and Aschoff found that 9 of 12 animals showed a positive reaction.

Grober discusses the origin of infection particularly in tubercular pleurisies. This membrane lying between the chest wall on the one hand and the lung on the other, might, *a priori*, be regarded as unlikely to be infected by micro-organisms. The mucous secretion of the bronchial passages is bactericidal and in many individuals they are free from germs. It would seem improbable that the pleura is infected from the blood stream, as other parts would be involved, resulting in a general miliary tuberculosis.

Turning to the lymph vessels, it seems highly probable that they form the chief channel of infection. These vessels open on the surface of the pleura by means of stomata and lead to larger vessels which ultimately open into vessels in the anterior and posterior mediastinum. For infection to take place through these vessels, say from a caseous bronchial gland, it would be necessary to assume a reversal of the lymph current.

There is some evidence to show that such a process occasionally occurs in pathological conditions. In carcinoma of the stomach, for instance, the mesenteric glands are sometimes infiltrated, and in mammary cancer the subcutaneous tissues in the neighbourhood occasionally present secondary nodules.

The writer endeavours to show that the chief source of infection is from the lung, and brings forward some experiments to show that the lymphatics from the lung lead to the surface of the pleura. When a T-tube is tied into the trachea of a rabbit and a solution of Chinese ink allowed to run slowly in, the particles are found to pass along the pulmonary lymphatics and to lodge in the pleura. This observation is of much interest in solving the question as to the origin of tubercular pleurisies. It is well recognized that small tubercular foci may exist in the lung and yet give no clinical evidence of their presence. Grober's observations on the course of certain of the pulmonary lymphatics readily explain the course of bacilli from the lung to the pleura.

This view of the origin of pleurisy is supported by some statistics of Schlenker's. In 106 autopsies of various cases there were 33 instances of pleural adhesions which could be referred to latent tubercular foci in the lungs or bronchial glands, indicating the frequency with which pleurisy depends on a latent tuberculosis. Weigert also states that in cases of tubercular pleurisy he always found tubercular foci in the lungs.

Tubercular mediastinal glands are regarded by Weigert as setting up pleurisy *per contiguitatem*, but v. Recklinghausen thinks it not improbable that there may be a reversal of the lymph current and thus bacilli may be carried from these glands to the pleura.

Another mode of origin of pleurisy is from a similar process in the peritoneal sac. There is an extremely free anastomosis between the lymphatic vessels of the two cavities, and clinically, a class of cases in which the two serous membranes are affected by tuberculosis is well recognized.

Grober discusses a mode of infection not very generally recognized, *viz.*, a spread of infection downward from the pharynx or tonsils through the lymphatic glands of the neck to the connective tissue at the root of the neck and thence to the pleura. Grober has demonstrated that injections of Indian ink to the tonsils is followed by the deposit of the particles in the lymph glands of the neck and also in the upper part of the pleura. Clinically, Fraenkel has recorded two cases of mixed infection of the pharynx with diphtheria bacilli and streptococci followed by a double streptococcus pleurisy, the bacteria travelling down the neck to the mediastinum and thence to the pleura. Similar instances of pleural infection are quoted, spreading down from streptococcus infection of the tonsils.

Pleural Effusions Simulating Pneumonia.

HERMAN B. ALLYN. "On Some Cases of Pleural Exudate with Physical Signs of Pneumonia." *Philad. Med. Journ., Sept. 29th, 1900.*

Allyn calls attention to a class of cases of pleurisy in which the physical signs simulate those of pneumonia, vocal resonance and fremitus being increased and marked bronchial breathing being present. That such cases are often extremely puzzling is undoubtedly true, but we can hardly agree with the writer that for the most part such cases are first recognized at autopsy. If the fact that blowing breathing and bronchophony may occur in pleurisy, be carefully borne in mind we believe that thorough examination and a careful consideration of all the facts of the case will usually lead to a correct diagnosis, although it may be impossible at a first examination to arrive at a definite conclusion without aspiration.

Cases are quoted from Austin Flint and Bowditch supporting the resemblance of the physical signs in consolidation and pleurisy in certain instances, and an original case is reported. A young woman, nine days previous to admission to hospital, was taken with a severe rigor and pain in the side. The left lung was flat from base to apex, anteriorly and posteriorly, the resistance was much increased and so also vocal resonance. The breathing was high pitched and tubular and there were numerous subcrepitant râles at the base behind.

The apex beat was slightly displaced to the left and herpes was present. The autopsy revealed the presence of 250 cc. of pus, a fibroid lung, bronchiectasis and old tubercular foci in both lungs.

There is no pathognomonic sign of pleural exudation. The only safe way is to examine all the signs and not to expect any one to have a too definite value. Flatness on percussion and greatly increased resistance indicate fluid rather than consolidation, and the value of these signs is greatly increased if the upper limit of dulness follows the lines of Garland and Ellis.

A change in the level of dulness with alteration of the patient's posture, Skodiac resonance anteriorly, displacement of organs and restricted or absent movements of the diaphragm on the affected side also suggest fluid.

The most important sign is puncture of the thorax, and the writer rightly emphasizes the use of a large aspirating needle, the hypodermic needle being too small to allow pus to pass.

Treatment of Membranous Colitis."

W. H. THOMPSON, M.D. "Treatment of Membraneous Colitis." *Med. News, June 2nd, 1900.*

Dr. Thompson sketches briefly the symptoms of this distressing and

obstinate malady. In addition to the griping pains, the tenesmus and bearing down feeling, the constipation and passage of strings and shreds of mucus, alternating with periods of quiescence and apparent improvement, the nervous symptoms are usually pronounced. Headaches, neuralgias, pains here and there, palpitation and depression of spirits are commonly present, and are attributed to the absorption of toxic substances from the bowels.

Pathological anatomy throws but little light on the condition. The colon is dilated and thinned, with patches of veins at its lower end which are doubtless the source of the occasional hæmorrhages. Microscopical examination of the discharged membrane shows nothing but a structureless membrane; there is no fibrin or pus or other evidences of inflammation, and the cells present belong to the intestine and show only evidence of fatty degeneration.

Mechanical irritation of the rectum, such as horse-back riding or bicycling, or in women the presence of fibroids is responsible for some cases, but the commonest cause is the prolonged retention of hardened scybalæ. There is frequently a history of habitual constipation, hence the frequency of the disease in women.

In the treatment the colonic symptoms must be first attended to, and nothing is so efficacious as free irrigation with normal salt solution, to which five drops of oil of peppermint to the pint may be added. Three to five gallons of this solution may be used once in twelve hours, given by Kemp's rectal irrigator at a temperature of 100° F., care being taken that all the fluid is returned. Great quantities of fæces are thus dislodged and much relief is experienced. Sometimes benefit is experienced by injecting a gallon of water at the end of irrigation with 60 to 80 grs. of resorcin, and once a week a pint of hot water with 30 to 40 grs. of nitrate of silver. These irrigations are not regarded as curative as in cases of ulcerative colitis, but they are a valuable method of removing toxic products from the bowel.

Internally, castor oil is of service given in doses of ½ to 1 drachm as an emulsion, either half an hour before or one hour after meals. This treatment should be continued for months, and only intermitted when it increases the patient's dyspeptic symptoms. Nitrate of silver in ¼ gr. doses combined with 9 grs. of turpentine resin is also of service. After six weeks, ¼ gr. of sulphate of copper may be substituted for the silver.

The dependence of the disease on chronic constipation suggests the use of purgatives, either phosphate of soda or sulphate of magnesia being recommended. Daily massage of the bowels, particularly in the region of the colon, is also to be recommended.

In the diet, beans, corn, spinach, the woody vegetables and oatmeal

should be excluded, whilst the patient is encouraged to eat meat, poultry, eggs, zoolak or kumyss, peptonised milk and most cereals.

When everything else fails, Hale White recommends the establishment of an artificial anus in the right flank so as to give the colon a prolonged rest. *F. G. Finley.*

Pharmacology.

UNDER THE CHARGE OF A. D. BLACKADER.

The Causes of Habituation to the Use of Morphine.

E. Faust. "The Causes of Habituation to the Use of Morphine." *Arch. f. exp. Path. u. Pharm., B. LXI.*

Dogs readily become habituated to the use of morphine. The author, by regularly injecting increasing doses of morphine, was able to endow the dogs so treated with a very marked degree of immunity towards this drug. Regular examination of the fæces and determination of the amount of morphine excreted in them, gave the very interesting result, that, as an animal became habituated to the use of morphine, increasingly smaller portions of the injected amounts of the drug could be found in the fæces. As morphine is excreted by the mucous membrane of the intestine alone (only the merest traces being eliminated by the kidneys), the conclusion was clear that increasingly larger amounts were destroyed in the organism. While a dog not accustomed to the use of morphine excretes in the fæces from 60 to 70 per cent. of the amount injected, one habituated to the drug acquires the power of completely destroying amounts of morphine sufficient to cause the death of three or four dogs of equal size.

The following figures taken from some of the experiments illustrate strikingly the gradual development of this faculty.

A dog which has received daily injections of morphine during one week, receives after one week 0:1 grammes morph. acet., excretes 25 per cent.

Another dog, which has been receiving daily injections of increasing amounts of morphine for five weeks, excretes no morphine after administration of 0:5 grammes morph. acet.

The immunity acquired is, however, only a relative one, for it is possible to produce the death of an animal accustomed to very large doses by suddenly and largely increasing the amount administered. This result corresponds exactly to clinical experience with morphine habitués, who not infrequently die from the effects of a dose larger than their usual one, which is taken either by accident or by design.

The author concludes that the tolerance of large doses of morphine exhibited by those accustomed to its use, is due to the fact that, through

regular use of the drug, the organism acquires the faculty of destroying amounts of the poison sufficient to cause grave symptoms or death in those unaccustomed to the use of morphine, and that this tolerance is not due to a change in the nervous or other tissues producing a blunting or deadening of the powers of reaction towards the poison. Further, he concludes that this power of destroying large amounts of the poison is acquired through a development of a function, present normally to some extent, and is not to be accounted for by the development of new functions or substances not normally and physiologically existing.

The Comparative Action of Digitalis, Strophanthus, and Diuretin as Diuretics.

Under the above title J. A. MacLaran reports in the *Medical Chronicle*, a series of investigations of the action of these drugs on the renal function.

Experimenting on himself as a normal subject, he finds that the administration of tincture of digitalis, 3 vi in four days, was followed by an increased secretion of urine. Infusion of digitalis produced no such effect, nor did the administration of tincture of strophanthus, *M* 85 in four days, or that of diuretin, 270 grains in three days.

In studying diuresis in cases of cardiac dropsy, the author found that in 24 cases out of 40 marked diuresis set in under the influence of rest in bed and a regular diet without exhibition of any drugs.

Of 26 cases treated by administration of digitalis, 22 showed an increased activity of the renal functions, while 5 of these suffered from gastro-intestinal disturbances.

The administration of strophanthus in 13 cases was followed in 8 of them, by an increased diuresis, gastro-intestinal disturbances occurring in 10 of the 13 cases. Increased flow of urine followed the use of diuretin in 9 out of 12 cases treated with this drug, gastro-intestinal symptoms being present in one-half of the cases.

The author concludes that digitalis is the drug *par excellence* in cardiac dropsy; the diuretic effect is more constant than that of strophanthus and it is better borne than the latter drug. Strophanthus may be used as a change from digitalis. Diuretin should be used in cardiac dropsy only after digitalis or strophanthus have failed, or in combination with one of these drugs. Diuretin acts more favourably than digitalis or strophanthus in cases of Bright's disease associated with anasarca.

The author's view that uræmia is caused by the retention of urea in the blood, will hardly be accepted as in accordance with the views now held on this subject by physiologists and clinicians.

J. T. Halsey.

Pathology.

UNDER THE CHARGE OF J. GEORGE ADAMI.

The Etiology of Yellow Fever.

REED AND CARROLL. "On the Etiology of Yellow Fever." *Philadelphia Medical Journal, Oct. 26th, 1900.*

WASDIN. "On the Etiology of Yellow Fever." *Philadelphia Medical Journal, Nov., 1900.*

Interest in this question has been aroused afresh by the recent publication of the results of the work of the United States Army Surgeons, performed at Havana during the past year, which seeks to establish between yellow fever and the mosquito a relationship similar to that now recognized as existing between malarial fever and this insect. The first attempt to discover the etiological factor in the production of yellow fever, along bacteriological lines, was made by Sternberg, who isolated from yellow fever cadavers a bacillus which he suggested might be the cause of this disease. The subject then lay dormant for some years only to be revived by the discovery of the so-called "Bacillus Icteroides" by Sanarelli and his claim that it was the sole etiological factor of yellow fever.

Careful comparison between the cultures of this bacillus and the micro-organism obtained by Sternberg, showed a suggestive similarity, but no proof of their identity. Sanarelli's results were of such interest to pathologists that naturally all subsequent investigations in yellow fever took their origin from the standpoint marked out by him, and in consequence Surgeon Walter Reed and his associates in their experiments in Cuba first endeavored to isolate this bacillus from the blood of patients suffering from yellow fever during life, and from their blood and organs after death.

The results of Reed's work were published in a recent number of the Philadelphia Medical Journal. On 18 yellow fever patients and in 11 autopsies, Reed and Carroll failed to find the bacillus icteroides in a single instance. Dr. Finlay, of Havana, a most careful student of yellow fever, had for some years expressed his belief that the mosquito inhabiting Cuba, the Culex fasciata, was instrumental in the propagation of yellow fever. Following much the same plan that Ross and others followed in their work on malaria, Reed and his associates allowed mos-

quitos fed directly on yellow fever patients, to bite non-immune Americans, either dwelling in or connected with the military hospitals in Cuba.

Of the 11 patients experimented on, 9 failed to develop any symptoms whatever, two of the subjects bitten, however, developed typical cases of the disease. The movements of these two men were carefully ascertained for a considerable time before inoculation, and in one of them, Dr. Carrol, the possibility of other sources of infection cannot be ruled out, as Dr. Reed frankly states, for Dr. Carroll had visited an autopsy room where section on a yellow fever patient had been conducted the previous day, remaining there about one hour, occupied with taking cultures from the organs of a man dead of pernicious malaria.

The movements of the other man could be followed for 51 days previous to the development of an attack and at no period of this time was he within the yellow fever zone, or was he exposed in any way to infection from other yellow fever patients. This case alone is regarded by Dr. Reed as a positive case of the transmission of yellow fever from man to man by means of the mosquito.

The third case, which resulted in the death of Dr. Lazear, of Baltimore, can only be regarded as confirmatory of the other positive and probable cases. Dr. Lazear, who had been constantly visiting the yellow fever wards, taking blood specimens, handling autopsy material with impunity, and moreover having himself been bitten without result by inoculated mosquitos, while on a visit to Las Animas Hospital, allowed himself to be bitten on the hand by a mosquito which had certainly had the opportunity of biting yellow fever patients in the wards of this hospital. Within the same time after the bite of this mosquito, which serves for the incubation of yellow fever, Dr. Lazear developed a typical severe case of this disease which rapidly passed on to a fatal conclusion.

If this work of Reed, Carroll and Lazear be correct, we are forced to recognize the mosquito as the intermediate host of three diseases in man, Filiarisis, Malaria and Yellow Fever, and to realize the fulfilment of that prophecy made after the work of Theobald Smith on Texas Fever, that as typhoid fever in man could be correlated with hog cholera in animals, so that type of disease corresponding to Texas Fever in animals could be found in Yellow Fever in man, for we are now able to work out a similar etiology for both the last named diseases.

Aside from the scientific interest which the results of Dr. Reed and Carroll have naturally excited, a touch of pity is aroused in all by the untimely fate of a young, well trained physician who voluntarily exposed his life to the danger of contracting a disease appalling in its mortality and which unlike malarial fever, has no known remedy to check its ravages.

Since the publication of Reed's paper the controversial spirit at present existing between the United States Army and United States Navy has culminated in a reply to Dr. Reed's remarks concerning the bacillus icteroides from Surgeon Wasdin, who supports the claim of Sanarelli in regard to the toxic and pathogenic powers of this bacillus.

The bacillus icteroides itself, cultures of which have been studied in Montreal for the past year, especially by Dr. McCrae, grows easily and rapidly in all our culture media, and the failure of Reed and Carroll to find this bacillus in 30 cases of yellow fever studied with the most thorough and painstaking methods, shows that its claim for specificity in yellow fever fails to fulfil the first one of Koch's well known postulates, unless we grant, as Wasdin claims, that arterial blood taken from the lobe of the ear, which by the way is necessarily mixed arterial and venous blood, is a better matrix from which to isolate B. icteroides, than venous blood taken in large quantities from the arm. Moreover bacilli differing in no respect morphologically and culturally from the bacillus icteroides, can be isolated from the normal intestine of man and animals, as has been done in the Molson Pathological Laboratory, and the presence of such bacilli in the circulating blood of patients suffering from a disease in which secondary infection by various bacilli is the rule and not the exception, does not necessarily point to their causal connection with the disease any more than that the presence of colon bacilli in the blood of patients in the last stages of typhoid fever, indicates that the colon bacillus is the cause of the typhoid lesions in the intestines and mesenteric glands.

Moreover even if the bacillus icteroides is the cause of yellow fever, the researches of Reed and Carroll are of no less value in showing the mode of infection by mosquitoes in this disease, as has recently been demonstrated in the plague for the common flea, and possibly for the fly, in the case of typhoid fever.

W. W. Ford.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Canadian Practitioner.

July, 1900.

1. The General Public and the Medical Profession. ADAM H. WRIGHT.
2. The Treatment of Squint (Strabismus) from the Standpoint of the Family Physician. J. T. DUNCAN.
3. Nasal and Post-Nasal Synechiæ. J. PRICE-BROWN.
4. Morphia in the Treatment of Puerperal Convulsions. DAVID HOIG.

August, 1900.

5. Is the Anglo-Saxon Race Degenerating? JAMES RUSSELL.
6. Excision of the Testicle, Vas Deferens, and Vesiculæ Seminales at one Sitting, for Tuberculous Disease. GEORGE A. PETERS.
7. Adenoid Vegetations. J. P. MORTON.

September, 1900.

8. On the Present Status of Therapy and Its Future. LEWELLYS F. BARKER.
9. An Unusual Case of Crossed Paralysis. D. CAMPBELL MYERS.

2. DUNCAN states that the vast majority of cases of squint in children of three years of age are due to faulty refraction, and that the child will not outgrow it. For this reason the general practitioner should advise a thorough examination of the eyes, so as to ascertain the refraction. He should advise that this be done as soon as possible, but if some weeks must elapse before it can be done, he should use atropine drops once, twice, or three times a day in both eyes, ordering that the drops be left off for at least two weeks before the child goes to be examined. If it be reported to him that the child needs to wear glasses, he should exercise his influence with the parents to see that they are worn. In case of any hesitancy on the part of the parents to attend to the matter, he should free himself from responsibility by pointing out some of the dangers of delay, as, that the child may be permanently cross-eyed, that he may be partially blind, that an operation may be needed in after years, and that the operation, although it may straighten the eye, will not cure the blindness.

3. Price-Brown believes that the cause of synechiæ, in all cases, is either directly or indirectly traumatic. By directly traumatic he means, direct physical injury of one form or another, either by the surgeon's knife, saw, or cautery, or whatever other instrument he may use in operating upon his case, or from direct accidental injury to the parts themselves. Perhaps of surgical instruments the electro or galvano-cautery is the one of all others, the use of which within the nasal passages is most likely to be followed by the development of this condition owing largely to the œdema which it produces, but when used with judicious care there is no instrument more useful in the whole armamentarium. By indirect traumatism he means simple abrasions of the surfaces from forcible blowing, when the swollen tissues are either almost or altogether in contact, or abrasion of the surfaces by continuity or contact, as in cases of chronic congestive hypertrophy of the middle and inferior turbinated bodies. In the naso-pharynx, however, he believes that the most frequent cause is indirect instead of direct traumatism, the very opposite of its occurrence within the nasal chambers. There is perhaps in this variety only a single proximate cause, and that is excessive redundancy of pharyngeal tonsillar tissue. In removing bony synechiæ he has found the saw the most useful instrument, and for fibrous synechiæ the knife, scissors, or hooked nasal knife, but very rarely using the cautery. He uses tampons of absorbent cotton soaked in one of the hydrocarbon oils, and left *in situ* for several days without being disturbed, except to keep the passages above and below cleansed and open.

4. Hoig while believing that in morphia we possess a valuable, perhaps the most valuable, drug for the control of puerperal convulsions, yet would not be inclined to rely on it in the worst types of the disease with complete suppression of urine and a comatose state between attacks, but would rather have recourse in such cases to every means to promote diaphoresis and the free action of the bowels. It is much less useful in non-albuminous cases than in those where albumen is present, and may even be harmful. Before delivery it is of comparatively little value, chloroform being the drug of election at that time. For morphia to be efficient it is necessary to use it in large doses, as much as half a grain being borne without any harm resulting.

6. Peters advises that every case of advanced tuberculous disease of the testicle should be dealt with by operation, and if the disease is found to have spread up the vas to the vesiculæ seminales, the whole tract should be removed. It should be the aim of the surgeon to remove every particle of the disease as clearly as in a case of carcinoma, though failure to secure every atom of disease is much less disastrous than in

the case of carcinoma. The patient should be placed under the same hygienic conditions as are found to be favorable for recovery from tuberculosis in other parts of the body.

The Canada Lancet.

July, 1900.

1. The General Public and the Medical Profession. ADAM H. WRIGHT.
2. Electricity and Brain Power. SIR JAMES GRANT.
3. Removal of Septal Spurs—A Note upon the Use of Carmalt Jones Spokeshave. D. J. GIBB WISHART.

August, 1900.

4. Acute Mastoid Suppuration with Presentation of Cases. PERRY G. GOLDSMITH.
5. A Case of Ankylosis Following Injury. J. T. CLARK.
6. A Case of Incarcerated Ovary. HORACE C. WINCH.

September, 1900.

7. The Prognosis of Drug Habits, with Some Reference to Treatment. STEPHEN LETT.
8. Occlusion of the Bowels Following Appendectomy: Enterectomy Eighteen Hours after Delivery. Obstruction from Tuberculous Peritonitis. ERNEST HALL.

2. SIR JAMES GRANT relates two cases, one of defective muscular power, and the other of thermo-anæsthesia, as evidence that defective mental activity unassociated with structural change may be very materially improved, by the transmission through the brain of modified electric currents by the application of a neurotone.

3. WISHART has abandoned the use of the nasal saw, and instead prefers the spokeshave in the removal of those projections springing from the nasal septum, which present the appearance of horns, such as occur usually far back in the nasal cavity, are bony in character, and impinge against a small area of the mucous covering of the inferior or middle turbinated surfaces; or the appearance of shelves, usually more anterior in situation, partly cartilaginous and partly bony in character, and in length anywhere from one-quarter to one inch, and lying parallel or almost parallel to the floor of the inferior meatus. The advantages claimed for this instrument are the absence of bleeding till the operation is accomplished, with the advantage of the non-obstruction to the vision, great saving of time in operating, the almost entire absence of pain or fear to the patient, and the satisfactory course pursued in healing.

7. LETT says that an examination of medical literature, shows a more

hopeful feeling with reference to the prognosis of all drug addictions. He emphasizes the facts that the therapeusis of the treatment of morphinism, alcoholism, cocainism, etc., is not obscure, secret or necessarily difficult, but on the contrary, simplicity itself. The very large proportion of medical men, litterateurs, ministers and nurses, who have become victims of this and other drug habits and whose mental attitude, depressed enough at best, and who lack all physical and moral stamina because of disease itself, are the very ones having such erroneous views held before them by their authorities. The pathogenesis of morphinism and other forms of narcomania, does not generally or necessarily include a moral depravity. It is necessary to obtain first the confidence, next the good will and last but most important of all the self-aid of the patient towards his own recovery, and by a firm positive conviction of the successful issue in the physician's bearing and statements, to bring out and hold and develop the best elements in the patient's organization, mental as well as physical. He adds that by an intelligent and gradual reduction, proper feeding and nutrition, etc., we reconstruct and rebuild tissues which constantly require less and less narcotics, and when the last dose is given we have a normal, well-balanced mind, a vigorous strong body, and a restored self-respect. The plan outlined calls for two things, the proper man and the proper place. He strongly urges that the pages of our text-books and journals bearing the shibboleth "once an opium eater always an opium eater," or any modification of its false and untrue notes be torn from them, cast out, re-written.

S. Hall relates two interesting cases of intestinal occlusion, and thinks that when constipation gradually increases in spite of careful regulation of diet and medication, in patients who have previously had inflammatory diseases within the abdomen or who have repeatedly suffered from intra-abdominal pain, an exploratory operation should not be postponed until the patient is *in extremis*.

The Canadian Journal of Medicine and Surgery.

July, 1900.

1. Surgery among the Insane: its Difficulties, its Advantages, its Results. A. T. Hobbs.
2. Pre-Columbian Leprosy. Robert Lehmann-Nitsche.
3. Abdominal Pregnancy. Report of a Case. H. Meek.
4. Recent Neurological Researches. E. S. Stafford.

August, 1900.

5. Gun-Shot Wounds of Kidney: Nephrectomy—Thyroid Tumour and Fibrous Tumour of Lower Jaw. Thomas H. Manley.
2. Pre-Columbian Leprosy. Robert Lehmann-Nitsche.

September, 1900.

6. Club-Foot in the Adult. B. E. McKenzie.
7. Cases of Malignant (?) Disease of Gall Bladder, Simulating Hydro-Nephrosis—Feeding through the Gall Bladder for Three Days. F. N. G. Starr.
8. The Relation of the Profession to Sanitoria for Consumptives. P. H. Bryce.
9. Exploratory Incision in Obscure Brain Lesions—Some Points in the Treatment of Meningocele. L. W. Cockburn.
10. Some Proofs that Small-pox is Prevented by Vaccination. W. F. Elgin.

1. Hobbs urges gynæcological operations, when required, among the insane for the restoration of physical health, and the improvement and recovery of the mental condition.

3. Meek reports an interesting case of tubal pregnancy complicated by a myoma in the walls of the uterus. The diagnosis had been very obscure as the tumour had very marked resemblance in nearly all of its characteristics to a kidney tumour, so much so that an exploratory incision was made in the right semilunar line of the abdomen extending from the lower margin of the ribs above downward about six inches.

6. McKenzie relates his experience during the last two years, with twenty-eight cases of club-foot in persons varying in age between the sixteenth and forty-third years. In none was there any operative intervention other than subcutaneous cutting, for he considers that neither operation on bone, nor the open incision is called for, except in a very small proportion of cases, in less than five per cent. The result, other things being equal, is better where there has been no cutting, other than that done subcutaneously. The time occupied in treatment is no longer than when the open incision is made. Whatever method be adopted, the deformity of the foot *per se* should be fully corrected before the relationship of the foot to the leg be interfered with. In all the cases referred to the results were most gratifying, with two exceptions.

7. Starr reports the history of a woman who was suffering from a mass about the size of a duck's egg three fingers below the costal margin. It presented several of the signs and symptoms of hydro-nephrosis, but on operation it was found to be a distended gall bladder. The walls of the gall bladder were sutured to the abdominal incision and a drainage tube inserted. As soon as the patient began to come out of the anæsthetic the vomiting recurred, and the stomach could retain nothing. Nutrient enemata were resorted to for about thirty-six hours, but at the end of that time they could not be retained. On the evening of the third day after operation the patient was sinking rapidly, stomach con-

tents were regurgitated from the mouth, she was restless, the face was drawn and pinched and the eyes sunken, the temperature was subnormal, and the pulse 140 and irregular. While discussing the advisability of giving a subcutaneous injection of normal saline solution, it occurred to the writer that through the gall bladder there was a direct opening into the duodenum and that normal saline might be introduced into the intestine in that way. Three pints of solution were placed in the irrigator, the nozzle inserted into the drainage tube and packed around to prevent leakage, and the injection was commenced with the irrigator at an elevation of about eighteen inches and afterwards raised to about three feet. The patient must have received at least a quart of the solution. Inside half an hour the effect was marvelious, the patient became restful, the pulso full, the temperature became slightfully elevated, the vomiting ceased and she had her first undisturbed sleep. These saline injections were repeated twice during the night, and the improvement continued, though at times there was nausea and some vomiting. In the morning the success of the experiment was so apparent that three ounces of peptonized milk were ordered to be injected through the drainage tube every two hours. This method of feeding was continued for three days, when, as there was no more vomiting, food was given by the mouth. The recovery was uninterrupted. The writer believes that his patient was the first to clearly demonstrate the usefulness of this novel but rational method of feeding.

9. Cockburn reports a case of what he believed to be cerebral neurasthenia, in which marked improvement followed trephining. He thinks that in all cases of suspected tumour of the brain exploratory incision should be undertaken. A case of meningocele is also reported and the writer condemns the injection of Morton's fluid into the sac, but considers that excision is the proper treatment.

10. Elgin contributes an interesting statistical study on the prevention of small-pox by vaccination.

Dominion Medical Monthly.

July, 1900.

1. Nasal and Post-Nasal Synechiæ. J. Price-Brown.
2. Why Medical Men Should be a Court of Justice in Criminal Cases. J. J. Cameron.
3. Valedictory, Read at Trinity Medical College Convocation, May 17, 1900. Frank C. Trebilcock.

August, 1900.

4. Notes from Chicago Clinics. A. F. McKenzie.

5. The Treatment of Chronic Disease of the Kidneys. E. T. Snyder.
6. Fractures of Base of Skull. J. G. Lamont.

September, 1900.

7. Canadian Medical Association—President's Address. R. W. Powell.
8. Sewage Purification by Bacteria. Willis Chapman.

2. Cameron brings forward evidence in support of making medical men the sole judges of criminal responsibility. He advocates a medical court for criminal cases—one composed of educated medical experts whose broad culture and special knowledge will make them the highest authority in the land on such questions as criminal responsibility; whose professional skill will enable them to adjudge and differentiate the motives, the capital, the power of resistance of the unfortunate criminal, and who will prescribe treatment or punishment according to the necessities of each case.

The Maritime Medical News.

July, 1900.

1. The Mutual Relations of the Profession and the Public. D. Macintosh.
2. The Necessity of Proper Sanitary Conditions in our Public School. D. N. Morrison.
3. The Prevention of Tuberculosis. John W. Flinn.

August, 1900.

4. Preventive Medicine. W. Bayard.
5. Why Medical Men Should be a Court of Justice in Criminal Cases. J. J. Cameron.

September, 1900.

6. Tropical Diseases. F. W. Cox.
7. Arterio-Sclerosis, A Discussion. C. Murray, Stewart Skinner, T. W. Walsh, and F. H. Wetmore.

Kingston Medical Quarterly.

July, 1900.

1. The Prevention of Tuberculosis. John Herald.
2. Sewage Purification by Bacteria. Willis Chapman.
3. Hæmatherapy. J. Melville.
4. Double Hare-Lip with Protrusion of the Os Incisivum—Complete Cleft Palate. W. G. Anglin.

5. Vitality of Typhoid, Diphtheria, and Cholera Bacteria in Milk. W. T. Connell.
6. Pneumonia and Empyema. John Herald.

2. Chipman gives a critical review of the various methods employed in Great Britain for the disposal of sewage, and points out that the method of disposal by bacteria tanks is rapidly taking the place of the precipitation works.

4. Anglin reports a case of hare-lip. The patient, a young man of fifteen years of age, had a complete double hare-lip with marked flattening of the alæ nasi, a protrusion of the os incisivum with the attached central incisors, and a complete cleft of the palate extending through the uvula. The first operation consisted in removing the protruding bone and suturing the palate. A fortnight later the labial cleft was united, the lateral margins being freely separated from the bone, and freshened according to Rose's method. The result was extremely satisfactory.

Canada Medical Record.

July, 1900.

1. For "That Nose," Gifford Fox.

August, 1900.

2. Shall We Tell Women with Uterine Cancer the Nature of their Disease. A. Lapthorn Smith.

L'Union Medicale du Canada.

Août 1900.

1. Volumineux Chondrôme de la Jambe chez une Malade Présentant des Angiômes Cutacées. A. Marien.
2. Tentative de Meurtre: Allégation de Folie Morale, Responsibilité, Observation Médico-Légal. Geo. Villeneuve.
3. Deux Cas de Kystes avec Torsion du Pedicule. de L. Harwood.
4. Analyses Chimiques des Eaux Potables au Point de Vue Hygiénique. J. A. Chopin.

La Revue Medicale.

4 Juillet.

1. Note Sur la Gasoline en Chirurgie. M. T. Brennan.
2. La Cathéterisme et Le Lavage de La Vessie chez La Femme. M. T. Brennan.

11 Juillet.

Le Docteur Norbert Fafard.

18, 25 Juillet, 1, 8, 15 Août.

3. Du Vertige de Ménière et Son Traitement. JEHIN-PRUME.

22 Août.

4. Inversion Uterine. Nouvelle Technique Opératoire. Guerison. M. T. BRENNAN.

29 Août, 12, 19 Septembre.

Coq-à-l'âne Médicaux.

5 Septembre.

Revue des Journaux.

1. BRENNAN, referring to the paper by Dr. Riordan on the use of Gasoline as a detergent, states that he has used it in the treatment of uterine cancer. It has no effect upon the progress of the disease nor upon the pain, but it acts as a detergent and helps to allay the odour. He has also used it in acute and chronic gonorrhœa with benefit.

2. BRENNAN, in a paper on the catheterization of women, repeats Kelly's advice that physicians and nurses should understand the absolute importance of properly performing this operation, and the grave results that may follow when it is carried out without the proper care. He concludes that the most rigid precautions must be taken during the operation, and that the physician must employ the most careful asepsis. That all diseases of the urethra and the meatus must be searched for and cured before the woman is catherized, and that washing out the bladder should be done aseptically and without the use of a sound by utilizing gradual atmospheric pressure.

3. JEHIN-PRUME describes fully the symptoms and known pathology of Ménière's disease, and is a strong advocate for the use of quinine according to Charcot's method. The patient is kept in bed and carefully watched. Seven and a half to fifteen grains of the sulphate are administered daily, in small and frequent doses and freely diluted, so as not to irritate the gastric mucous membrane. For the first days the noises and vertigo are increased, but they gradually diminish and usually disappear after fifteen days of treatment. If, however, the patient is not better, some time is allowed to elapse, and another fifteen days of treatment is commenced. Other methods of treatment are also noticed in the paper.

4. BRENNAN describes an operation he performed for the reduction of an inverted uterus, after all other methods had failed. Through an abdominal incision the use of dilators and vagino-abdominal manipulations also failed. With strong scissors he incised the annular constriction for

a distance of from three to four centimetres, dividing the cervix and the posterior cul-de-sac of the vagina. Then, by means of forceps and the finger and thumb, he gradually step by step reduced the invaginated uterus. The operation was completed by closing the incisions, and the patient made a perfect recovery.

La Clinique.

Juillet 1900.

1. Le Prix Samuel D. Gross.

Août, Septembre, 1900.

2. Résume des Rapports Présentés au XIII Congrès International de Médicine, Paris, 2-9 Août 1900.

Le Bulletin Medicale de Quebec.

Août 1900.

1. Des Injections Intra-Trachéales dans les Affections Trachéo-Bronchiques et Pulmonaires. L. J. N. Fiset.

Septembre 1900.

2. Un Cas de Maladie de Little. J. Pinault.

Reviews and Notices of Books.

A Dictionary of Medicine and the Allied Sciences. Comprising the Pronunciation, Derivation, and full Explanation of Medical, Pharmaceutical, Dental, and Veterinary Terms, together with much Collateral Descriptive Matter, Numerous Tables, etc. By Alexander Duane, M.D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms, for Webster's International Dictionary. Third Edition, Enlarged and Thoroughly Revised, with Eight Full Page Coloured Plates. Lea Brothers & Co., Philadelphia and New York, 1900. Price, $3.00.

This is a very handy and useful book, being midway in size between the pocket dictionary and the larger lexicon. It contains, moreover, all words in general use at the present day, obsolete ones being omitted in order not to make the volume too cumbersome. The plan of the work is excellent. The titles are printed in black type, then follows the pronunciation in parentheses, and the Latin or Greek derivation in brackets, the Greek words being given in ordinary type with the quantities marked in order to make the work available to those unfamiliar with Greek. The sub-headings, when important, are also in black type, and the secondary divisions in Italics; thus the eye catches at a glance what is looked for. "The system of spelling adopted is intended to indicate the best usage regardless of analogy." The attempt of so many American writers to abolish the use of the diphthong is ignored, as is also the dropping of the final 'e' in such words as 'bromide.'

The plates, of which eight are introduced into this edition, are fairly good; we note, however, several inaccuracies in depicting the staining of leucocytes, and the appearance of the plasmodium malariæ in fresh blood. The book is printed on good paper without the objectionable gloss which is so trying to the eyes, and contains a number of tables which add considerably to its value to the student.

We have much pleasure in recommending it to our readers.

Rough Notes on Remedies. By William Murray, M.D., L.R.C.P., London, Newcastle-on-Tyne. Third Edition. H. K. Lewis, London, 148 Pages.

This little work has been so well received that a third edition has been found necessary to meet the continued demand. In this, there

are new chapters on "Specific Diseases," "Ptyalism in Jaundice," "Liqueur Brandy," and "Turpentine Vapour in the Treatment of Pneumonia;" and the work is about one-third larger than either of the two previous editions.

We have here a well timed counterblast to the endless multiplication of new drugs, that the pharmaceutists and drug manufacturers of the present time are never weary of flinging at the medical profession. These gentry have, indeed, in recent years grown so impudent, that their drummers are a positive nuisance to every prominent member of the medical profession, and there is reason to believe that old and reliable remedies are often made to give place to nostrums of no established merit whatever, and this notwithstanding the acknowledged fact, that the most skillful and successful practitioners have always been known to restrict their pharmaceutical armamentarium to a few of the drugs in common use.

Dr. Murray's experience in the action of such standard remedies as mercury, arsenic, and belladonna, is given in a most interesting and instructive manner, and should be in the hands of every young practitioner as an incentive to the habit of making accurate observations on the action of medicines, and as a guide in the treatment of many morbid conditions, which only tend to recovery when favourably modified by the action of suitable remedies.

A careful perusal of this contribution to the science of medicine, cannot fail to impress the reader with the idea that there are drugs of great value when used intelligently, and that the most important thing to learn of any drug is *when and how* it should be employed or, in other words, the precise indications for its use.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., assisted by CHARLES ADAMS HOLDER, M.D.

This volume contains articles on the Thorax and its Viscera by Dr. Ewart, on diseases of the Skin by Dr. Stelwagon, on diseases of the Nervous System by Dr. Spiller, and on Obstetrics by Dr. Norris.

Dr. Ewart's article covers a good deal of ground, and will be found useful as a guide to recent work. We would have preferred to see some of the subjects dealt with more in detail, many of the paragraphs being so curtailed as to fail to convey a clear idea of the work referred to. A good deal of attention is given to treatment, both of the heart and lungs. In the 137 pages devoted to the thorax there will be found many hints in dealing with this large and important department of medical practice.

Diseases of the skin are treated in a clear and concise fashion by Dr. Stelwagon, full references to the literature of the subject being appended.

Dr. Spiller is to be congratulated on the exceedingly interesting section on diseases of the nervous system. His review is comprehensive and written in an attractive style. The subject is treated from a clinical standpoint, and articles devoted to anatomy and pathology are purposely omitted.

To the general practitioner the section on obstetrics will probably appeal as one of the most valuable in the book, forming, as it does, an excellent resumé of advances in this field of work.

PATHOLOGY AND MORBID ANATOMY. By T. HENRY GREEN, M.D., F.R.C.P., Revised and Enlarged by H. Montagu Murray, M.D., F.R.C.P., 9th American, revised from the 9th English Edition by Walton Martin, Ph.B., M.D.; pp. 565, 4 colored plates and 393 illustrations. Lea Bros. & Co., Philadelphia and New York, 1900. $3.25.

This 9th edition of Green's well known textbook of Pathology is, to all intents and purposes, a new work, much enlarged, and in every respect most praiseworthy advance upon the previous editions. Those old editions were, honestly speaking, little more than cram-books, designed to give to the student little more than the minimum of pathological knowledge necessary to ensure a pass in the ordinary medical examinations. The same cannot be said of the present work. While still not in any way pretending to be a complete textbook in pathology, it is, so far as I have been able to look into it, sound and well up to date. The illustrations are a wonderful improvement upon those in the older works, add to which it contains a most admirable chapter of some 65 pages upon the pathology of the nervous system by Dr. Mott to which the only objection to be raised is that it is out of proportion to the rest of the work. Further a chapter upon Diseases of the Blood and upon Malaria has been added by Dr. Walton Martin, the American editor. So that the book now, instead of being one against which to caution the student, is to be recommended as a preliminary textbook. Some objection may still be taken to the arrangement of the various chapters; for teaching purposes we doubt whether it is well to begin with the Arrest of Impairment and Nutrition, and upon that immediately to describe Tumours, then to take up Hypertrophy, Inflammation and Repair, Disturbances of the Circulation and Fever as successive chapters. It is difficult to see the line of progressive development of the subject which can in this manner be possibly brought about; indeed, save in the first two chapters there is a complete absence of natural arrangement of the subjects

treated. On the other hand it is doubtful whether the progressive study of pathology is possible in 380 pages of clear readable type devoted to General Pathology, 100 of which are given to Parasites and Bacteria. But while noting this objection the editors and publishers are to be congratulated upon the marked improvement in the work.

A Manual of Personal Hygiene. Edited by Walter L. Pyle, A.M., M.D., Assistant Surgeon to Wills Eye Hospital, Philadelphia; Fellow of the American Academy of Medicine, etc., etc. Contributors:—J. W. Courtney, M.D., G. H. Fox, M.D., E. F. Ingals, M.D., W. L. Pyle, M.D., B. A. Randall, M.D., G. N. Stewart, M.D., and C. G. Stockton, M.D. Illustrated. Philadelphia, W. B. Saunders & Co., 1900. Canadian agents, J. A. Carveth & Co., Toronto. Price, $1.50.

The object of this book as set forth in the preface is to indicate the best means of developing and maintaining physical and mental vigour. A chapter each is devoted to the Digestive Apparatus, Skin and its appendages, Vocal and Respiratory Apparatus, Ear, Eye, Brain and Nervous System, and Physical Exercises. It is not clear whether the book is intended for use by professional men or as a guide to those not possessing medical knowledge. The anatomy and physiology of the parts under consideration is discussed in an elementary way, more or less easily understood by the non-professional reader, while the matters treated in some divisions of the book cannot be intelligible to any but professional men. We cannot but think that the book would have gained by being the production of one man, the various contributors apparently having widely different ideas as to what was required of them. Still there is a great deal of valuable information contained in it for both classes of readers.

Bacteriology and Surgical Technique for Nurses. By Emily M. Stoney, Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Ill.; author of "Practical Points in Nursing," etc. Illustrated, W. B. Saunders & Company, 1900, Philadelphia. Canadian agents, J. A. Carveth & Co., Toronto. Price, $1.25.

This small volume of 190 pages constitutes the notes of a series of lectures on the subjects treated, which were delivered by the author in her capacity as Superintendent of a training school. The first part of the book deals with Bacteriology and Antiseptics, the second part with Surgical Technique, Signs of Death, and Autopsies.

In the opening chapters on Bacteriology, it is intended to give just

so much as will be found of value to a nurse in enabling her to understand its relationship to disease. The subject is presented in a concise, practical way, which every nurse can readily grasp. The importance of having a thorough knowledge of the appearance, odour, and qualities of the more commonly used antiseptics, disinfectants, etc., cannot be too forcibly emphasized, and the summary given is an excellent one.

The Surgical Technique described in the second part of the book is most thorough. Several chapters are devoted to anæsthesia, the preparation of surgical dressings, the use of the thermocautery, etc., and the preparation of sutures, ligatures, sponges and other necessaries. In the preparation of the surgeon and his assistants, and of the patient, stress is laid on the paramount importance of strict asepsis. A detailed account is also given of the care of the patient after operation.

One feature of the book which we note with pleasure is the introduction of a chapter dealing with operations in private practice, setting forth how the nurse can best make use of the facilities afforded by the ordinary domestic furniture and utensils when she is unable to procure the complicated apparatus found in hospital. There is also a chapter on Signs of Death and Autopsies, the latter describing the preparations to be made by the nurse for the assistance of the person performing the autopsy.

The book is a valuable one and will no doubt meet with a ready sale among the class for whom it is written.

Fractures. By Carl Beck, M.D., Visiting surgeon to St. Mark's Hospital and to the New York Poliklinik; formerly Professor of Surgery, New York School of Clinical Medicine, etc., etc. With an appendix on the Practical Use of the Rœntgen Rays. 178 illustrations. Philadelphia, W. B. Saunders and Company, 1900. Canadian agents, J. A. Carveth & Co., Toronto. Price, $3.50.

Dr. Beck in this book brings most lucidly before the reader the altered views of fracture and their associated conditions and complications, which have resulted from the use of the Rœntgen Rays.

"During the past few years literature on the Rœntgen rays has grown to large proportions; it has led to many and revolutionizing discoveries; most of these have marked a clearer understanding and consequently the better treatment of fractures." A most interesting chapter is devoted to the classification of fractures, and to the process of repair as observed in long and flat bones. This chapter is remarkably concise, and gives a review of the older teaching, as well as the modifications learned from the use of the rays in fractures and sprains, in a manner at once interesting and instructive.

The flood of light thrown on many of these troublesome injuries to the bones and joints is amazing, and Dr. Beck, by his illustrations as well as by his letter-press, has made them very clear to the reader. This is particularly the case with regard to obscure conditions, hitherto often regarded as contusions and sprains, which in many instances are shown by the Rœntgen rays to have been linear fractures and fissures accompanied by little or no displacement. As an instance, may be mentioned the frequency in which the so-called Colles' fracture is complicated by intra-articular fracture of the lower fragment or fissure of the lower end of the ulna. This information is useful to the man who has not an X-ray mechanism as well as to the hospital surgeon.

The treatment of fractures is fully considered. There is included, also, a chapter on the practical use of the X-ray machine. The book is to be highly commended.

G. E. A.

THE TREATMENT OF FRACTURES. By CHARLES LOCKE SCUDDER, M.D., Surgeon to the Massachusetts General Hospital, Out-Patient Department; Assistant in Clinical and Operative Surgery in the Harvard Medical School, assisted by Frederick J. Cotton, M.D., with 585 illustrations. W. B. Saunders, Philadelphia. Canadian agents, J. A. Carveth & Co., Toronto, 1900.

The authors really consider, in addition to treatment, the anatomy and pathology of the fractures of bones, and their experience with the Rœntgen rays is made good use of and fully illustrated. The indications in treatment are clearly shown and the simplest form of apparatus advised to the exclusion almost altogether of specially manufactured splints.

In speaking of fractures, the terms "closed" and "open" are used instead of "simple" and "compound." Whether the expressions "closed" and "open" express any more definite conditions than "simple" and "compound," may possibly be questioned by the reader.

In treating fractures of the olecranon and patella, the authors are wisely conservative. They emphasize the safety of the mechanical non-operative treatment aided by position, and draw attention to the generally satisfactory results thereby obtained, reserving operation for compound or "open" fractures and for "closed" fractures in which the fragments cannot be fairly well approximated.

Fractures of the lower end of the radius receive the attention to which their frequency and importance entitle them. The Rœntgen rays have demonstrated the frequency with which Colles' fracture of the lower end of the radius is accompanied by fracture of the styloid process of

the ulna. The authors state that this occurs in "about fifty to sixty-five per cent. of all cases."

The chapters on fractures of the bones of the skull and vertebral column are excellent. Great importance is attached to the systematic use of massage; and the advantages from the use of general anæsthesia in obscure fractures, especially those occurring in the neighbourhood of joints, is clearly set forth.

G. E. A.

ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE. By CHARLES E. DE M. SAJOUS, M.D., and One Hundred Associate Editors. Illustrated with chromolithographs, engravings and maps. Volume V. The F. A. Davis Co., Philadelphia, New York and Chicago, 1900. Pp. 662.

The fifth volume, issued under date of October, 1900, extends from "Methyl Blue" to "Rabies." Like previous volumes it contains not only a concise statement of the present knowledge concerning each subject, but also a brief review of the work done in the subjects during the years 1896-7-8. The fact that each article is signed by the author adds to its value. The present volume deals with several important specialties—otology, laryngology, neurology, ophthalmology and pediatrics. There are, in addition, valuable articles on the "Disorders of Pregnancy," by Dr. Currier of New York; "Abnormal Parturition," by Drs. Grandin and Marx of New York; and "Nursing and Infant Feeding," by Drs. Holt and Fétra, of New York. The latest views and teachings are embodied in these chapters.

There is also an interesting article on Morphinomania and its treatment. Two of our principal drugs, opium and quinine, receive merited consideration. Mention must also be made of a full and suggestive article on Pneumonia, its complications and sequelæ by Thomas G. Ashton, of New York; and one on "Pneumonokoniosis," by Sajous.

The present is quite up to the standard of previous volumes, the whole form most valuable books of reference.

G. E. A.

ATLAS AND EPITOME OF DISEASES CAUSED BY ACCIDENT. By DR. E. GOLEBIEWSKI, of Berlin. Authorized Translation, Edited by Pierce Bailey, M.D., of New York. Philadelphia, Saunders and Co., 1900. Canadian agents, J. A. Carveth and Co., Toronto. Price, $4.00.

This work is the first which has appeared upon the subject in the English language, and is one which covers ground upon which authoritative

information is indispensable to any one concerned with the disabling effects of accidents, especially as regards the estimation of the loss of earning power. The medical expert in civil suits, and all who have to make examinations for accident insurance companies, will find it of great assistance to them.

In spite of the difficulties inherent in the plan of the work, in which the text is mainly designed to be explanatory of the illustrations, the subject is treated in a thorough and comprehensive manner. The illustrations are very skilfully executed; but it would have been more useful and instructive, though perhaps less impressive, to have increased the number of diagrams and skiagraphs at the expense of the coloured plates.

Of the work as a whole we can only speak in the highest terms of recommendation. The arrangement of the subject matter is to a large extent original with the author, who has been well known for years as one of the leading authorities in this department of work; and the statements throughout are based on his personal observations.

W. J.

Physician's Visiting List for 1901.—P. Blakiston's Son & Co., Philadelphia, 1900.

How few books there are that have not outrun their usefulness in fifty years! Such is the boast of the publishers of this visiting list who take great pride in the continued success of this indispensable accompaniment of every physician and certainly their long experience has produced one of the most complete and compact visiting lists issued.

The book, besides the visiting list, contains tables of weights and measures, doses, comparison of thermometer scales, directions for resuscitation in apnœa and asphyxia, etc. There are blank pages for memoranda, addresses of patients and nurses, accounts, obstetric and vaccination engagements, records of births, deaths, etc. The book is issued in several sizes for a varying number of patients, and is bound in smooth black leather with pencil holder and pocket at the back.

The Medical News List for 1901. In four styles. Lea Brothers & Co., Philadelphia and New York. Price, $1.25.

This is a very neat and handy visiting list, containing much useful information besides the blanks for patients names, births, deaths, obstetric engagements, etc. It is issued in the form of a wallet-shaped book, bound in seal grain leather and provided with a pocket and pencil and rubber. It opens with 32 pages of printed data of the most useful sort, including an alphabetical table of diseases with approved remedies, a table of doses, sections on examination of urine, artificial respiration, in-

compatibles, poisons and antidotes, a diagnostic table of eruptive fevers, and a plate showing at a glance the incisions for the ligation of the various arteries. It is printed on fine tough paper suitable for either pen or pencil, and is well adapted for saving time and keeping a correct record of accounts, etc.

Post-Mortem Examinations. By John Caven, B.A., M.D., Toronto. J. A. Carveth & Co., 1900, 40 pp., interleaved.

The directions given for post-mortem technique are clear and free from useless verbiage and the illustrations appear well chosen. The object of interleaving the book is not at all clear. The special chapters on the technique in criminal poisoning cases and on the examination of the new-born will greatly increase its suitability to the needs of general practitioners, who are called on to make autopsies in such cases in relatively greater frequency than is the routine hospital pathologist.

W. J.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, October 19th, 1900.

J. W. STIRLING, M.B, VICE-PRESIDENT IN THE CHAIR.

Drs. W. W. Chipman, David Patrick, and W. B. Howell were elected ordinary members.

Drs. W. H. Sutherland, J. R. O'Brien, H. B. Cushing, S. H. McKee, B. D. Gillies, C. T. Ballantyne, F. T. Tooke, L. W. Martin, T. Turnbull, of the Royal Victoria Hospital, and Drs. E. R. Secord, W. Wilkins, C. P. Henry W. H. Hill, W. G. Turner, J. W. Patton, W. E. Rowley, L. M. Murray, H. R. Gray, and A. P. Hall, of the Montreal General Hospital, and Drs. A. Macdonald, and C. H. Christie, of the Western Hospital, were elected temporary members.

Retroperitoneal Hernia.

DR. F. G. FINLEY reported the clinical history of this case, and DR. D. D. MACTAGGART described the post-mortem appearances. See page 913.

DR. J. G. ADAMI recalled to the members that this was not the first case of retroperitoneal hernia to be communicated to the society. Some four years ago Dr. Wyatt Johnston had brought forward a case in which the whole of the small and, if he remembered aright, the greater part of the large intestines, were contained in a huge retroperitoneal sac.

DR. J. M. ELDER could not undrstand why there were not grave symptoms of obstruction present when such a large portion of the intestines had passed through the rent. One would have expected, besides the pain and shock reported by Dr. Finley, vomiting such as is usually found in cases of obstruction.

DR. FINLEY, in reply, could only say that vomiting had not been present to any extent. The man's wife had given him salts when the pain first set in and he had vomited three times after receiving the dose.

Porro-Cæsarean Section.

DR. F. A. L. LOCKHART reported this case and exhibited the uterus which he had removed. See page 883.

Conservative Cæsarean Section.

DR. D. J. EVANS gave the previous history, and DR. WILLIAM GARDNER the report of the operation. See page 879.

DR. D. J. EVANS said that it had occurred to him in thinking over

the case after the operation, that the alarming hæmorrhage which had occurred might possibly have been more easily controlled if the anæsthetic had been withdrawn and the patient allowed to come partially to, as then the uterine muscle would have had more tendency to contract.

Dr. William Gardner had a word to say about the question of fibroids complicating pregnancy. There were cases in which it was possible to raise a fibroid out of the pelvis while the patient was in the second stage of labor. On one occasion, in consultation with Dr. MacCallum, he had raised a fibroid tumour and allowed of the birth of the child and of the placenta. Half an hour afterwards the woman had died suddenly. There had been no autopsy, but he considered it likely that the force used in pushing up the tumour out of the way had torn some adhesion or other structure in the pelvis and that death had resulted from hæmorrhage.

Dr. Lockhart thought a point might be brought up regarding the condition of the child in his own case. On delivery it was pale and did not breathe until some time had been spent by Dr. J. C. Cameron in working with it. The question was whether the anæsthetic had had anything to do with the production of this condition. He did not think it had.

Dr. Gardner further said that the question was often put as to whether it was proper so to complete the operation as to prevent further pregnancies. He thought it was utterly unjustifiable in the present state of surgery. The uterine incision very often became adherent to the abdominal wall and a future operation was simplified to the extent that the peritoneal cavity need not be opened.

Carcinoma of the Cervical Glands in a Child.

Dr. J. M. Elder exhibited a lad fourteen years of age with carcinoma of his cervical glands. See page 900.

Dr. G. E. Armstrong had never seen cancer in a child of that age and it was also the first case which he had seen of carcinoma starting in that space. The cases were very rare and the condition of the glands bore a very striking resemblance to that seen in sarcoma. The fact that the child's mother had died of cancer eight years before brought up the question of heredity or infection.

One factor which might help to explain its occurrence in a lad of fourteen years of age was that although it had developed in a boy of fourteen it had developed in a tissue which was undergoing retrograde degenerative changes.

Dr. J. G. Adami looked upon the case as remarkable both on account of the early age at which the cancer had appeared and the slow growth of the disease. The general rule was that in very young persons cancer

developed rapidly and here the development appeared to be peculiarly slow. Yet, on the other hand, it had to be called to mind that cancer affecting the head was very often of slower development than in most other parts of the body. It was suggested that the history of long continued catarrhal irritation given in the notes, might play some part in explaining the etiology.

Dr. J. M. Elder, in reply, said that the cause might possibly have been the pre-existing catarrh. As to the site of the cancer, it was quite true that one would have expected it to have arisen from the vault of the pharynx on account of the presence there of cylindrical epithelium, at the same time cancer of both the faucial and lingual tonsils was on record, then why not of the pharyngeal. It might have begun in the remains of the old adenoid ring.

Stated Meeting, November 2nd, 1900.

James Perrigo, M.D., President in the Chair.

Ichthyosis Hystrix.

Dr. John Hutchinson presented two children, the subjects of this disease, and exhibited photographs of one taken when the patient first came under his notice. See page 911.

Dr. J. M. Jack expressed surprise that the case had been announced on the card as one of ichthyosis hystrix. The lesions in this disease were peculiarly localized, the extensors being principally involved while here the reverse was the case. The case when first seen, before treatment was instituted, might have appeared more like ichthyosis. According to Dr. Hutchinson's report, the scales when removed did not show the presence of sebaceous plugs on their under surface nor did they leave a bleeding surface, two points against its being ichthyosis. Then, again, true ichthyosis did not react so quickly to remedies.

Dr. G. Gordon Campbell agreed with Dr. Hutchinson and not with Dr. Jack in his opinion of the nature of the case. With regard to the situation of the lesions, he had seen half a dozen cases of ichthyosis hystrix and while in most of these the eruption was on the extensor surfaces, following longitudinal lines on the extremities and transverse ones on the trunk, at the same time no two cases were exactly alike. He did not, however, agree in calling it "hystrix" but thought it should rather be classified as ichthyosis simplex or xeroderma. With regard to the action of thyroids he had tried it in several cases in whom the skin through accumulated dirt presented much of the appearance seen in these photographs. After the administration of thyroids, combined with the external use of oils and soap, the scales had mostly peeled off

leaving the skin smooth and soft, but the result was not permanent on discontinuing the treatment. Other points against calling the disease hystrix were that the skin over the whole body was more or less rough, whereas in hystrix the skin surrounding the lesions was quite soft and healthy; anl also the fact that a younger member of the same family showed evidence of xeroderma.

Dr. Hutchison, in reply, said that he had not recognized the disease at first as he was not familiar with it, but after consultation with one or two who were, he had arrived at that diagnosis and still held to it. He thought that whether it should be called a case of hystrix or simplex was a matter of opinion as the difference between the two lesions was merely a matter of degree.

Rhinoplasty.

Dr. James Bell presented two individuals on whom he had performed rhinoplasty and reported the history of two other cases. A full report will be published later.

Unusual Cases of Hernia.

Dr. A. E. Garrow read the report of three cases of operation for hernia in which the sac contained organs other than bowel or omentum. See page 908.

Dr. F. R. England could not understand how the Fallopian tube and broad ligament had been drawn into the sac by pulling on the round ligament. Even if the uterus were drawn up against the wall of the abdomen how was it possible to draw these parts into the ring.

Dr. Garrow, in reply, said the explanation was very simple. The round ligament was covered in front by the anterior layer of the broad ligament and when the round ligament was pulled upon, and particularly that portion extending from the horn of the uterus to the internal abdominal ring, a double fold of the anterior layer of the broad ligament together with the Fallopian tube was immediately drawn into the ring and even the horn of the uterus might follow.

Cases of Cholecystitis Complicating Typhoid Fever.

Dr. W. F. Hamilton read a paper with the above title. See page 888.

Dr. H. A. Laleur had never been fortunate enough to have come across a case of cholecystitis in typhoid fever although he had been on the lookout for it. One of the most interesting points about the present cases was that the operated cases showed the presence of stone, which suggested that cholecystitis as a recognized clinical entity in typhoid fever was usually preceded by gall-stones.

Dr. J. G. Adami thought it was of interest in this connection to know that Welch and Chiari and others had brought forward evidence to

show that the typhoid bacillus might be the cause of stone. The setting up of inflammation in the gall-bladder and the debris from the bacilli led to the formation of a stone. In Dr. Hamilton's case it seemed clear from the finding of gall-stones at the operation, that the stones had preceded the attack of typhoid. There might, however, be some cases in which the bacilli do set up a form of irritation which led to the formation of stone.

Dr. W. W. Ford referred to some work of Dr. Cushing's on a number of cases of cholecystitis in typhoid fever. Dr. Cushing had isolated the typhoid bacillus in pure culture from the centre of some of the stones obtained from these cases.

Dr. C. F. Martin thought that more than the presence of the typhoid bacilli in the gall-bladder was necessary to lead to the formation of stone. The dead tissues which result from the inflammation of the gall-bladder were sufficient to form a nucleus without looking to the bacilli. Because the bacillus was present in gall-stones it was not necessarily the cause of the disease.

OTTAWA MEDICAL SOCIETY.

A regular meeting of the society was held in St. Luke's Hospital, Ottawa, on November 9, 1900. Dr. J. L. Chabot, President, in the chair.

Pathological Specimens.

Dr. Prevost showed a uterus the size of a fœtal head with interstitial fibroid tumours which he had successfully removed from a case sent to him under the impression that it was a tumour of the lower bowel. The symptoms had been those of pressure and obstruction of the bowels and bladder. The tumour completely blocked the pelvis, and extended up to the umbilicus. Per vaginam, the finger came at once on the mass pressing down the posterior vaginal wall. No cervix was palpable. On operating it was found that just enough cervix was left for a supravaginal amputation of the tumour in which the normal outlines of the uterus were entirely lost. The tubes and ovaries were normal. There had been no disturbance of menstruation. The patient was doing well.

Anæsthesia in St. Luke's Hospital.

Dr. Prevost urged the benefit of having an anæsthetist who had devoted careful study to the subject and had had a large experience. The best anæsthetic was the one which was proved to be the safest, quickest, and had the fewest after effects. In his work in St. Luke's ether and latterly nitrous oxide and ether had been used so far without an accident. Of 527 cases in which a record had been kept as many as 30 per cent.

had albuminuria after the operation, passing off in a day or two at most. With ether it required from five to twenty minutes to secure full anæsthesia. In 159 cases of nitrous oxide and ether anæsthesia, albuminuria occurred in seven only, or 4½ per cent., and only a trace in each case. The time required to produce complete anæsthesia was 1 minute in 10 cases; 1¼ minutes in 5 cases; 1½ minutes in 39 cases; 2 minutes in 62 cases. The longest time needed was five minutes, and the shortest was forty-five seconds in one case. The maximum amount of ether used was seven ounces; the minimum was less than an ounce; the average was two to five ounces. Neither the amount of ether used nor the duration of the anæsthesia seemed to have any influence in the production of albuminuria, it having appeared in a case where only two ounces were used and when the duration of anæsthesia was only ten minutes. No lung complication occurred in any case. The method of producing anæsthesia by cocainization of the spinal cord had not yet been tried in Ottawa. Dr. Prevost referred to the work of Bier, Tuffier and Marx and described the technique of the injection and the necessity for strict asepsis and moderate dosage. Dr. Prevost suggested the use of this remedy by this method for the relief of pain apart from that of operation or labor in certain cases requiring morphine. A spirited discussion followed the reading of the paper after which Dr. Gorrell demonstrated the method of administration of nitrous oxide and ether.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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GEO. E. ARMSTRONG, G. GORDON CAMPBELL,
WILLIAM GARDNER, FRANK BULLER,
F. G. FINLEY, H. A. LAFLEUR,

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D. J. EVANS, W. F. HAMILTON, C. W. WILSON.
A. E. GARROW, E. J. SEMPLE, A. G. NICHOLLS.

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ON THE IMMEDIATE NEED OF A CIVIC HOSPITAL IN MONTREAL.

The inadequate nature of the accommodation provided in the present buildings which are used for purposes of a civic infectious hospital, their tumble-down condition, the impossibility of keeping them properly warmed during the winter months, or of sheltering the patients in the wards there from the elements, these are matters so well known to those of our readers who are in Montreal or have lived here, that it is late in the day, and useless to here point out the absolute need for a totally new building. It will be known also to our readers that our city as a city is practically penniless, so wickedly large a proportion of the annual income of the city has to be devoted to the payment of interest on the civic debt, that not one single department of the municipal work can now, in the absence of funds, be conducted as it should be in one of the larger cities on this Continent. This is an admission it is shameful for us to be compelled to make. The consequence of this state of affairs is that we cannot with any success call upon the municipal authorities to build a new infectious hospital; there are absolutely no funds for the purpose.

But, as Alderman Ames and Alderman Laporte have pointed out, under the new charter it is possible for the citizens to give their consent to obtaining a loan to be paid off in ten years or so, by means of an additional tax voluntarily accepted by the property holders as a body. So that now it is proposed that at the referendum in February next the citizens be asked to consent to a loan of $100,000 for the purpose of building a new hospital; that new hospital to be built upon land given by the city, and when built, to be conducted, not by the municipal officials, but by the combined authorities of the different general hospitals within the city boundaries together with representatives from the City Council.

It is, however, quite possible that the ordinary run of the smaller tax payers in the city may negative any such scheme which when passed would entail the addition of even a cent or two to the taxes, and this more possibly because here in Montreal we have still a large body of those who do not appreciate the benefits of isolation of infectious cases, who neglect to notify, and who in their crass ignorance freely do everything favorable to the dissemination of disease. To these the need of a new infectious hospital will in no sense appeal.

Cruel as it is to the individual it is, we feel, almost a benefit to Montreal that within the last few weeks there has shown itself an epidemic of scarlet fever so considerable that already the wards of the present Civic Hospital are full to overflowing and in certain parts of the city the schools have had to be closed. These patients cannot, in December, be properly lodged and attended to in the present building and the danger to which the patients are subjected and the further danger and misery that is entailed by the fact that other patients have to be isolated and kept at home, should rouse everyone in Montreal to realize the absolute urgency of the case. We trust that our readers in their visits to various homes throughout the city in dealing with all sorts and conditions of men, will bring to those men and women a realization of the facts of the case and will so influence public opinion that in February next the passage of the consent to a new loan for a new hospital be secured by an overwhelming majority.

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